# TOSHIBA L10 Series

User's Manual

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*TOSHIBA L10 Series Portable Personal Computer User's Manual*

First edition December 2004

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# Disclaimer

This manual has been validated and reviewed for accuracy. The instructions and descriptions it contains are accurate for the TOSHIBA L10 Series Portable Personal Computer at the time of this manual's production. However, succeeding computers and manuals are subject to change without notice. TOSHIBA assumes no liability for damages incurred directly or indirectly from errors, omissions or discrepancies between the computer and the manual.

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# FCC information

**Product Name: TOSHIBA L10 Series**

**Model number: PSL10/15**

## FCC notice "Declaration of Conformity Information"

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

*Only peripherals complying with the FCC class B limits may be attached to this equipment. Operation with non-compliant peripherals or peripherals not recommended by TOSHIBA is likely to result in interference to radio and TV reception. Shielded cables must be used between the external devices and the computer's external monitor port, USB port, serial port, parallel port, PS/2 mouse/keyboard port and microphone jack. Changes or modifications made to this equipment, not expressly approved by TOSHIBA or parties authorized by TOSHIBA could void the user's authority to operate the equipment.*

### FCC conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

### Contact

Address: TOSHIBA America Information Systems, Inc.
9740 Irvine Boulevard
Irvine, California 92618-1697
Telephone: (949) 583-3000

## BSMI Notice (Taiwan Only)

警告使用者：這是乙類的資訊產品，在開放的環境中使用時，可能會造成無線電干擾，在這種情形下，使用者會被要求採取某些適當的對策。

EU Declaration of Conformity

CE

TOSHIBA declares, that the product: TOSHIBA L10 series conforms to the following Standards:

Supplementary Information: “The product complies with the requirements of the Low Voltage Directive 73/23/EEC, the EMC Directive 89/336/EEC and/or the R&TTE Directive 1999/05/EEC.”

This product is carrying the CE-Mark in accordance with the related European Directives. Responsible for CE-Marking is TOSHIBA Europe, Hammfelddamm 8, 41460 Neuss, Germany.

## VCCI Class B Information

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

# Canadian Regulatory Information (Canada Only)

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulation of the Canadian Department of Communications.

Note that Canadian Department of Communications (DOC) regulations provide, that changes or modifications not expressly approved by TOSHIBA Corporation could void your authority to operate this equipment.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causng Equipment Regulations.

Cet appareil numérique de la class B respecte toutes les exgences du Règlement sur le matériel brouileur du Canada.

# Modem warning notice

## Conformity Statement

The equipment has been approved to [Commission Decision “CTR21”] for pan-European single terminal connection to the Public Switched Telephone Network (PSTN).

However, due to differences between the individual PSTNs provided in different countries/regions the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems, you should contact your equipment supplier in the first instance.

## Network Compatibility Statement

This product is designed to work with, and is compatible with the following networks. It has been tested to and found to conform with the additional requirements conditional in EG 201 121.

| | |
|---|---|
| Germany | ATAAB AN005,AN006,AN007,AN009,AN010 and DE03,04,05,08,09,12,14,17 |
| Greece | ATAAB AN005,AN006 and GR01,02,03,04 |
| Portugal | ATAAB AN001,005,006,007,011 and P03,04,08,10 |
| Spain | ATAAB AN005,007,012, and ES01 |
| Switzerland | ATAAB AN002 |
| All other countries/ regions | ATAAB AN003,004 |

Specific switch settings or software setup are required for each network, please refer to the relevant sections of the user guide for more details.

The hookflash (timed break register recall) function is subject to separate national type approvals. It has not been tested for conformity to national type regulations, and no guarantee of successful operation of that specific function on specific national networks can be given.

# Japan regulations

## Region selection

If you are using the computer in Japan, technical regulations described in the Telecommunications Business Law require that you select the Japan region mode. It is illegal to use the modem in Japan with any other selection.

## Redial

Up to two redial attempts can be made. If more than two redial attempts are made, the modem will return DELAYED. If you are experiencing problems with the DELAYED code, set the interval between redials at one minute or longer.

Japan's Telecommunications Business Law permits up to two redials on analogue telephones, but the redials must be made within a total of three minutes.

The internal modem is approved by Japan Approvals Institute for Telecommunications Equipment.

A04-0266001

# Pursuant to FCC CFR 47, Part 68:

When you are ready to install or use the modem, call your local telephone company and give them the following information:

- The telephone number of the line to which you will connect the modem
- The registration number that is located on the device The FCC registration number of the modem will be found on either the device which is to be installed, or, if already installed, on the bottom of the computer outside of the main system label.
- The Ringer Equivalence Number (REN) of the modem, which can vary. For the REN of your modem, refer to your modem's label.

The modem connects to the telephone line by means of a standard jack called the USOC RJ11C.

## Type of service

Your modem is designed to be used on standard-device telephone lines. Connection to telephone company-provided coin service (central office implemented systems) is prohibited. Connection to party lines service is subject to state tariffs.

If you have any questions about your telephone line, such as how many pieces of equipment you can connect to it, the telephone company will provide this information upon request.

### Telephone company procedures

The goal of the telephone company is to provide you with the best service it can. In order to do this, it may occasionally be necessary for them to make changes in their equipment, operations, or procedures. If these changes might affect your service or the operation of your equipment, the telephone company will give you notice in writing to allow you to make any changes necessary to maintain uninterrupted service.

### If problems arise

If any of your telephone equipment is not operating properly, you should immediately remove it from your telephone line, as it may cause harm to the telephone network. If the telephone company notes a problem, they may temporarily discontinue service. When practical, they will notify you in advance of this disconnection. If advance notice is not feasible, you will be notified as soon as possible. When you are notified, you will be given the opportunity to correct the problem and informed of your right to file a complaint with the FCC. In the event repairs are ever needed on your modem, they should be performed by TOSHIBA Corporation or an authorized representative of TOSHIBA Corporation.

### Disconnection

If you should ever decide to permanently disconnect your modem from its present line, please call the telephone company and let them know of this change.

### Fax branding

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity or individual sending the message and the telephone number of the sending machine or such business, other entity or individual. In order to program this information into your fax modem, you should complete the setup of your fax software before sending messages.

## Instructions for IC CS-03 certified equipment

1. The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

   Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection.

   The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

   Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

*Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.*

2. The user manual of analog equipment must contain the equipment's Ringer Equivalence Number (REN) and an explanation notice similar to the following:

   The Ringer Equivalence Number (REN) of the modem, which can vary. For the REN of your modem, refer to your modem's label.

*The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.*

3. The standard connecting arrangement (telephone jack type) for this equipment is jack type(s): USOC RJ11C.

   The IC registration number of the modem is shown below.

   Canada: 3652B-RD01D620

# Notes for Users in Australia and New Zealand

## Modem warning notice for Australia

Modems connected to the Australian telecoms network must have a valid Austel permit. This modem has been designed to specifically configure to ensure compliance with Austel standards when the country/region selection is set to Australia. The use of other country/region setting while the modem is attached to the Australian PSTN would result in you modem being operated in a non-compliant manner. To verify that the country/region is correctly set, enter the command ATI which displays the currently active setting.

To set the country/region permanently to Australia, enter the following command sequence:

AT+GCI=09

Failure to set the modem to the Australia country/region setting as shown above will result in the modem being operated in a non-compliant manner. Consequently, there would be no permit in force for this equipment and the Telecoms Act 1991 prescribes a penalty of $12,000 for the connection of non-permitted equipment.

## Notes for use of this device in New Zealand

- The grant of a Telepermit for a device in no way indicates Telecom acceptance of responsibility for the correct operation of that device under all operating conditions. In particular the higher speeds at which this modem is capable of operating depend on a specific network implementation which is only one of many ways of delivering high quality voice telephony to customers. Failure to operate should not be reported as a fault to Telecom.
- In addition to satisfactory line conditions a modem can only work properly if:
  - a/ it is compatible with the modem at the other end of the call and
  - b/ the application using the modem is compatible with the application at the other end of the call - e.g., accessing the Internet requires suitable software in addition to a modem.
- This equipment shall not be used in any manner which could constitute a nuisance to other Telecom customers.
- Some parameters required for compliance with Telecom's PTC Specifications are dependent on the equipment (PC) associated with this modem. The associated equipment shall be set to operate within the following limits for compliance with Telecom Specifications:
  - a/ There shall be no more than 10 call attempts to the same number within any 30 minute period for any single manual call initiation, and
  - b/ The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next.
  - c/ Automatic calls to different numbers shall be not less than 5 seconds apart.

- Immediately disconnect this equipment should it become physically damaged, and arrange for its disposal or repair.
- The correct settings for use with this modem in New Zealand are as follows:

  ATB0 (CCITT operation)

  AT&G2 (1800 Hz guard tone)

  AT&P1 (Decadic dialing make-break ratio = 33%/67%)

  ATS0=0 (not auto answer)

  ATS10=less than 150 (loss of carrier to hangup delay, factory default of 15 recommended)

  ATS11=90 (DTMF dialing on/off duration=90 ms)

  ATX2 (Dial tone detect, but not (U.S.A.) call progress detect)
- When used in the Auto Answer mode, the S0 register must be set with a value of 3 or 4. This ensures:
  - a person calling your modem will hear a short burst of ringing before the modem answers. This confirms that the call has been successfully switched through the network.
  - caller identification information (which occurs between the first and second ring cadences) is not destroyed.
- The preferred method of dialing is to use DTMF tones (ATDT...) as this is faster and more reliable than pulse (decadic) dialing. If for some reason you must use decadic dialing, your communications program must be set up to record numbers using the following translation table as this modem does not implement the New Zealand “Reverse Dialing” standard.

  Number to be dialed: 0 1 2 3 4 5 6 7 8 9

  Number to program into computer: 0 9 8 7 6 5 4 3 2 1

  Note that where DTMF dialing is used, the numbers should be entered normally.
- The transmit level from this device is set at a fixed level and because of this there may be circumstances where the performance is less than optimal. Before reporting such occurrences as faults, please check the line with a standard Telepermitted telephone, and only report a fault if the phone performance is impaired.
- It is recommended that this equipment be disconnected from the Telecom line during electrical storms.
- When relocating the equipment, always disconnect the Telecom line connection before the power connection, and reconnect the power first.
- This equipment may not be compatible with Telecom Distinctive Alert cadences and services such as FaxAbility.

  **NOTE THAT FAULT CALLOUTS CAUSED BY ANY OF THE ABOVE CAUSES MAY INCUR A CHARGE FROM TELECOM**

### General conditions

As required by PTC 100, please ensure that this office is advised of any changes to the specifications of these products which might affect compliance with the relevant PTC Specifications.

The grant of this Telepermit is specific to the above products with the marketing description as stated on the Telepermit label artwork. The Telepermit may not be assigned to other parties or other products without Telecom approval.

A Telepermit artwork for each device is included from which you may prepare any number of Telepermit labels subject to the general instructions on format, size and colour on the attached sheet.

The Telepermit label must be displayed on the product at all times as proof to purchasers and service personnel that the product is able to be legitimately connected to the Telecom network.

The Telepermit label may also be shown on the packaging of the product and in the sales literature, as required in PTC 100.

The charge for a Telepermit assessment is $337.50. An additional charge of $337.50 is payable where an assessment is based on reports against non-Telecom New Zealand Specifications. $112.50 is charged for each variation when submitted at the same time as the original.

An invoice for $NZ1237.50 will be sent under separate cover.

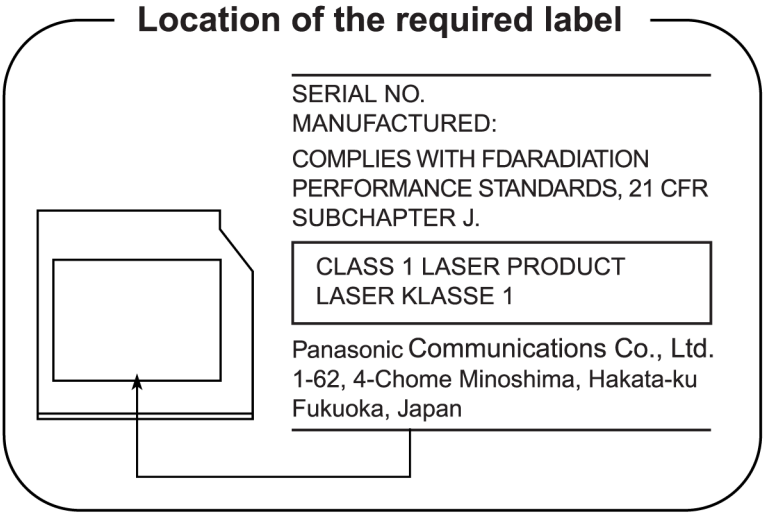
## Optical disc drive safety instructions

*Be sure to check the international precautions at the end of this section.*

# Panasonic

## DVD Super Multi UJ-830B

- *The DVD Super Multi drive employs a laser system. To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.*
- *Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.*
- *To prevent direct exposure to the laser beam, do not try to open the enclosure.*

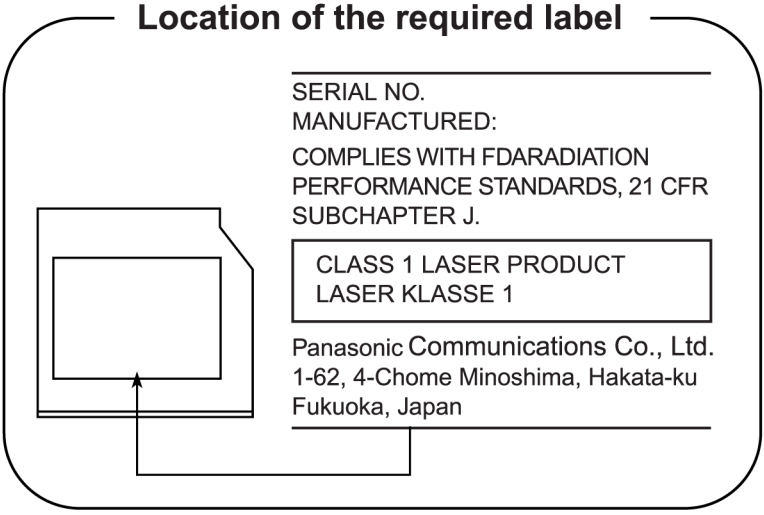


# Panasonic

## DVD Super Multi UJ-840B

- *The DVD Super Multi drive employs a laser system. To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.*
- *Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.*
- *To prevent direct exposure to the laser beam, do not try to open the enclosure.*

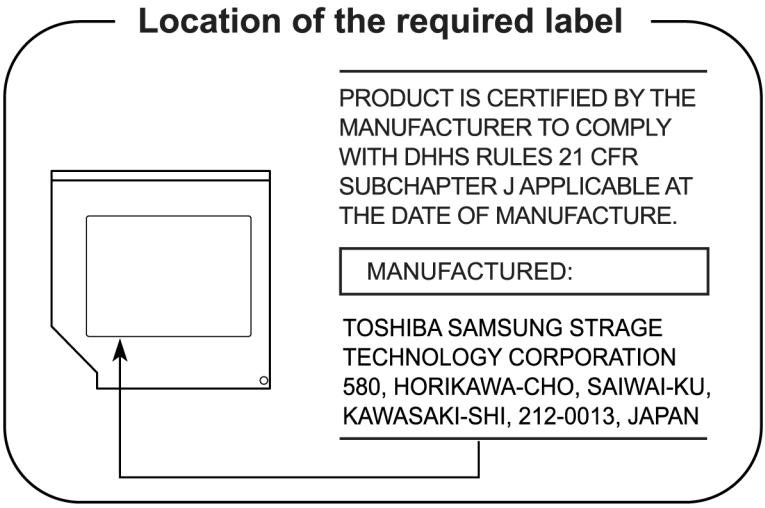
**Location of the required label**



# TOSHIBA SAMSUNG STORAGE TECHNOLOGY

## DVD-ROM & CD-R/RW TS-L462A

- *The DVD-ROM & CD-R/RW drive employs a laser system. To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.*
- *Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.*
- *To prevent direct exposure to the laser beam, do not try to open the enclosure.*

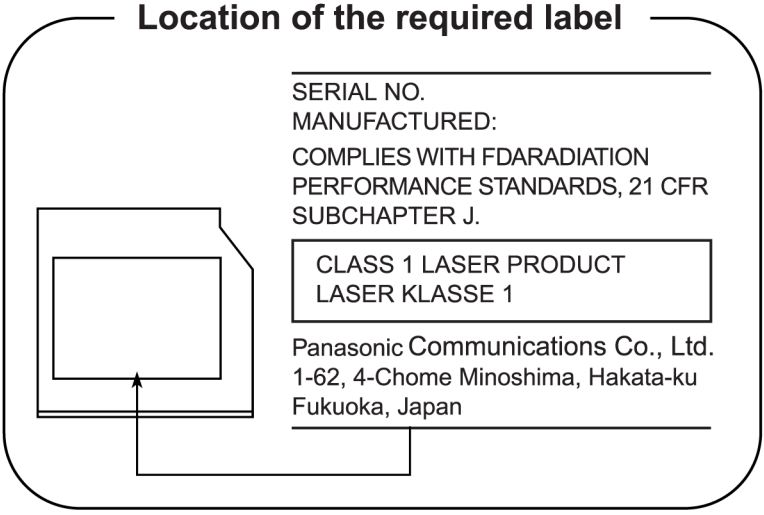

Location of the required label
PRODUCT IS CERTIFIED BY THE MANUFACTURER TO COMPLY WITH DHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT THE DATE OF MANUFACTURE.
MANUFACTURED:
TOSHIBA SAMSUNG STRAGE TECHNOLOGY CORPORATION
580, HORIKAWA-CHO, SAIWAI-KU, KAWASAKI-SHI, 212-0013, JAPAN

# Panasonic

## DVD-ROM & CD-R/RW UJDA760

- *The DVD-ROM & CD-R/RW drive employs a laser system. To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.*
- *Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.*
- *To prevent direct exposure to the laser beam, do not try to open the enclosure.*

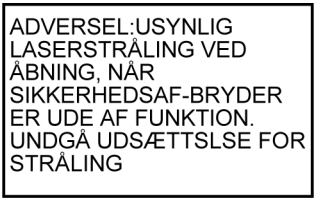
**Location of the required label**



# International precautions

**CAUTION:** This appliance contains a laser system and is classified as a "CLASS 1 LASER PRODUCT." To use this model properly, read the instruction manual carefully and keep this manual for your future reference. In case of any trouble with this model, please contact your nearest "AUTHORIZED service station." To prevent direct exposure to the laser beam, do not try to open the enclosure.

**VORSICHT:** Dieses Gerät enthält ein Laser-System und ist als "LASERSCHUTZKLASSE 1 PRODUKT" klassifiziert. Für den richtigen Gebrauch dieses Modells lesen Sie bitte die Bedienungsanleitung sorgfältig durch und bewahren diese bitte als Referenz auf. Falls Probleme mit diesem Modell auftreten, benachrichtigen Sie bitte die nächste "autorisierte Service-Vertretung". Um einen direkten Kontakt mit dem Laserstrahl zu vermeiden darf das Gerät nicht geöffnet werden.




**ADVARSEL:** Denne mærking er anbragt udvendigt på apparatet og indikerer, at apparatet arbejder med laserstråler af klasse 1, hviket betyder, at der anvendes laserstrlier af svageste klasse, og at man ikke på apparatets yderside kan bilve udsat for utilladellg kraftig stråling.

APPARATET BOR KUN ÅBNES AF FAGFOLK MED SÆRLIGT KENDSKAB TIL APPARATER MED LASERSTRÅLER!

Indvendigt i apparatet er anbragt den her gengivne advarselsmækning, som advarer imod at foretage sådanne indgreb i apparatet, at man kan komme til at udsatte sig for laserstråling.

**OBS!** Apparaten innehåller laserkomponent som avger laserstråining överstigande gränsen för laserklass 1.

**VAROITUS.** Suojakoteloa si saa avata. Laite sisältää laserdiodin, joka lähetää näkymätöntä silmilie vaarallista lasersäteilyä.

**CAUTION:** USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THE OWNER'S MANUAL MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

**VORSICHT:** DIE VERWENDUNG VON ANDEREN STEURUNGEN ODER EINSTELLUNGEN ODER DAS DURCHFÜHREN VON ANDEREN VORGÄNGEN ALS IN DER BEDIENUNGSANLEITUNG BESCHRIEBEN KÖNNEN GEFÄHRLICHE STRAHLENEXPOSITIONEN ZUR FOLGE HABEN.

# General Precautions

TOSHIBA computers are designed to optimize safety, minimize strain and withstand the rigors of portability. However, certain precautions should be observed to further reduce the risk of personal injury or damage to the computer.

Be certain to read the general precautions below and to note the cautions included in the text of the manual. Please also refer to the Safety Instruction Manual.

## Stress injury

Carefully read the Safety Instruction Manual. It contains information on the prevention of stress injuries to your hands and wrists than can be caused by extensive keyboard use. Chapter 3, *Getting Started*, also includes information on workspace design, posture and lighting that can help reduce physical stress.

## Heat warning

- Avoid prolonged physical contact with the computer. If the computer is used for long periods, its surface can become very warm. While the temperature will not feel hot to the touch, if you maintain physical contact with the computer for a long time (if you rest the computer on your lap, or if you keep your hands on the palm rest, for example) your skin might suffer low-heat injury.
- If the computer has been used for a long time, avoid direct contact with the metal plate supporting the I/O ports. It can become hot.
- The surface of the AC adaptor can become hot when in use. This condition does not indicate a malfunction. If you need to transport the AC adaptor, disconnect it and let it cool before moving it.
- Do not lay the AC adaptor on a material that is sensitive to heat. The material could be damaged.

## Pressure or impact damage

Do not apply heavy pressure to the computer or subject it to strong impact. Excessive pressure or impact can cause damage to computer components or otherwise cause malfunctions.

## PC Card overheating

Some PC Cards can become hot with prolonged use. Overheating of a PC Card can result in errors or instability in the PC Card operation. Also be careful when you remove a PC Card that has been used for a long time.

## Mobile phones

Use of mobile phones can interfere with the audio system. Computer operation is not impaired but is recommended that a distance of 30cm be maintained between the computer and a mobile phone in use.

## Central Processing Unit ("CPU") Performance Disclaimer

CPU Performance in your computer product may vary from specifications under the following conditions:

- use of certain peripheral products
- use of battery power instead of AC power
- use of certain multimedia games or videos with special effects
- use of standard telephone lines or low speed network connections
- use of complex modeling software, such as high end computer aided design applications
- use of the computer in areas with low air pressure (high altitude >1,000 meters or >3,280 feet above sea level)
- use of the computer at temperatures outside the range of 5°C to 35°C (41°F to 95°F) or > 25°C (77°F) at high altitude (all temperature references are approximate)

CPU Performance may also vary from specifications due to design configuration.

Under some conditions, your computer product may automatically shutdown. This is a normal protective feature designed to reduce the risk of lost data or damage to the product when used outside recommended conditions. To avoid risk of lost data, always make back-up copies of data by periodically storing it on an external storage medium. For optimum performance, use your computer product only under recommended conditions Read additional restrictions under "Environmental Requirements" in appendix A, *Specifications*.

Contact TOSHIBA Technical Service and Support for more information.

## CE compliance

This product and the original options are designed to observe the related EMC (Electromagnetic Compatibility) and safety standards. However, TOSHIBA cannot guarantee that this product still observes these EMC standards if options or cables not produced by TOSHIBA are connected or implemented. In this case the persons who have connected / implemented those options / cables have to provide assurance that the system (PC plus options / cables) still fulfils the required standards. To avoid general EMC problems, the following guidance should be noted:

- Only CE marked options should be connected / implemented
- Only best shielded cables should be connected

## Working environment

This product was designed to fulfill the EMC (Electromagnetic Compatibility) requirements to be observed for so-called "Residential, commercial and light industry environments".

TOSHIBA do not approve the use of this product in working environments other than the above mentioned "Residential, commercial and light industry environments".

For example, the following environments are not approved:

- Industrial Environments (environments with a mains voltage >230V~)
- Medical Environments
- Automotive Environments
- Aircraft Environments

*If this product is supplied with a network port, please refer to the paragraph "Network connection".*

Any consequences resulting from the use of this product in working environments that are not approved are not the responsibility of TOSHIBA.

The consequences of the use of this product in non-approved working environments may be:

- Interference with other devices or machines in the near surrounding area
- Malfunction of, or data loss from, this product caused by disturbances generated by other devices or machines in the near surrounding area

Therefore TOSHIBA strongly recommend that the electromagnetic compatibility of this product should be suitably tested in all non-approved working environments before use. In the case of automobiles or aircraft, the manufacturer or airline respectively should be asked for permission before use of this product.

Furthermore, for general safety reasons, the use of this product in environments with explosive atmospheres is not permitted.

### Network connection (Class A warning)

If this product has networking capabilities and will be connected to a network, Class A radiation limits will be observed (in accordance with technical conventions). This means that if the product will be used in a domestic environment, other devices in the near surrounding area may suffer interference. Consequently, please do not use this product in such environments (for example a living room), otherwise you could be held responsible for any ensuing interference.

### Information on the secure writing of optical media

Even if your software gives no indication that any problems have occurred, you should always check to ensure that information has been successfully stored on recordable optical media (CD-R, CD-RW and so forth).

## Wireless LAN and your Health

Wireless LAN products, like other radio devices, emit radio frequency electromagnetic energy. The level of energy emitted by Wireless LAN devices however is far less than the electromagnetic energy emitted by other wireless devices such as mobile phones.

Because Wireless LAN products operate within the guidelines found in radio frequency safety standards and recommendations, TOSHIBA believes Wireless LAN is safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situations or environments, the use of Wireless LAN may be restricted by the proprietor of the building or responsible representatives of the organisation. These situations may for example include:

- Using the Wireless LAN equipment on board of aeroplanes, or
- In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organisation or environment (e.g. airports), you are encouraged to ask for authorisation to use the Wireless LAN device prior to turning on the equipment.

### Safety Instruction for Wireless Products

If your computer has a wireless function, all safety instructions must be read carefully and must be fully understood, before you attempt to use it.

This manual contains the safety instructions that must be observed in order to avoid potential hazards that could result in personal injuries or could damage your Wireless Products.

## Limitation of Liability

For damage occurring due to an earthquake or thunder, fire beyond our responsibility, action by third party, other accident, intentional or accidental mistakes by a user, misuse, use under abnormal conditions, we do not take any responsibility.

For incidental damage (loss of business profit, business interruption, etc.) occurring due to use or disability of the product, we do not take any responsibility.

For damage occurring due to non observance of the contents described in the instruction manual, we do not take any responsibility.

For damage occurring due to erroneous operation or hang up caused by use in combination with products not related to our company, we do not take any responsibility.

## Usage Restrictions

Do not use the Wireless Products for controlling the following equipment:

- Equipment directly linked with human life corresponding to the following.
  - Medical equipment such as life support systems, equipment used in operations, etc.
  - Exhaust systems for gases such as poisonous gas etc. and exhaust systems for smoke.
  - Equipment that must be set up in compliance with various laws such as the Fire Services Act, the Construction Standard Act, etc.
  - Equipment corresponding to that mentioned above.
- Equipment linked with human safety or having a serious influence on the safe maintenance of public function, etc., because it is not designed or manufactured for this type of use.
  - Traffic control equipment for air, railroad, road, marine transport, etc.
  - Equipment used in atomic power plants etc.
  - Equipment corresponding to that mentioned above.

## WARNING

*Turn OFF the Wireless Communication switch of Wireless Products in a congested place, such as a crowded commuter train.*

*Keep this product away from a cardiac pacemaker at least 22cm.*

*Radio waves can potentially affect cardiac pacemaker operation, thereby causing respiratory troubles.*

*Turn OFF the Wireless Communication switch inside a medical facility or near medical electric equipment. Do not bring medical electric equipment close to the product.*

*Radio waves can potentially affect medical electric equipment, thereby causing an accident due to malfunction.*

*Turn OFF the Wireless Communication switch near an automatic door, fire alarm or other automatic control equipment.*

*Radio waves can potentially affect automatic control equipment, thereby causing an accident due to malfunction.*

*Do not turn ON the Wireless Communication switch in aircraft or in places that generate or can generate radio interference.*

*Radio waves can potentially affect them, causing an accident due to malfunction.*

*Monitor possible radio interference or other troubles to other equipment while the product is used. If any effect is caused, turn OFF the Wireless Communication switch.*

*Otherwise, radio waves can potentially affect other equipment, thereby causing an accident due to malfunction.*

*When using the product in a car, check with the automobile dealer if the car has an adequate electromagnetic compatibility (EMC).*

*Radio waves of the product can potentially hamper safe driving.*

*Depending on car model, the product can rarely affect car electronic equipment if it is used in a car.*

## NOTE

*Do not use this product in the following places:*

*Near a microwave oven or other environment which generates a magnetic field.*

*Near any place or equipment that generates static electricity or radio interference.*

*Depending on the environment, in a place where radio waves cannot reach the product.*

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# Preface

Congratulations on your purchase of the TOSHIBA L10 Series computer. This powerful notebook computer provides excellent expansion capability, including multimedia devices, and it is designed to provide years of reliable, high-performance computing.

This manual tells how to set up and begin using your TOSHIBA L10 Series computer. It also provides detailed information on configuring your computer, basic operations and care, using optional devices and troubleshooting.

If you are a new user of computers or if you're new to portable computing, first read over the *Introduction* and *The Grand Tour* chapters to familiarize yourself with the computer's features, components and accessory devices. Then read *Getting Started* for step-by-step instructions on setting up your computer.

If you are an experienced computer user, please continue reading the preface to learn how this manual is organized, then become acquainted with this manual by browsing through its pages. Be sure to look over the *Specifications* section of the Introduction, to learn about features that are uncommon or unique to the computer. If you are going to install PC Cards or connect external devices such as a monitor, be sure to read Chapter 7, *Optional Devices*.

## Manual contents

This manual is composed of the following eight chapters, four appendixes, a glossary and an index.

Chapter 1, *Introduction*, is an overview of the computer's features, capabilities, and options.

Chapter 2, *The Grand Tour*, identifies the components of the computer and briefly explains how they function.

Chapter 3, *Getting Started*, provides a quick overview of how to begin operating your computer and gives tips on safety and designing your work area.

Chapter 4, *Operating Basics*, includes instructions on using the following devices: TouchPad, optional USB floppy disk drive, Audio/Video controls, Sound System, optical media drives, modem, wireless communication and LAN. It also provides tips on care of the computer, floppy disks and CD/DVDs.

Chapter 5, *The Keyboard*, describes special keyboard functions including the keypad overlay and hot keys.

Chapter 6, *Power and Power-Up Modes*, gives details on the computer's power resources and battery save modes.

Chapter 7, *Optional Devices*, describes the optional hardware available.

Chapter 8, *Troubleshooting*, provides helpful information on how to perform some diagnostic tests, and suggests courses of action if the computer doesn't seem to be working properly.

The *Appendices* provide technical information about your computer.

The *Glossary* defines general computer terminology and includes a list of acronyms used in the text.

The *Index* quickly directs you to the information contained in this manual.

# Conventions

This manual uses the following formats to describe, identify, and highlight terms and operating procedures.

## Abbreviations

On first appearance, and whenever necessary for clarity, abbreviations are enclosed in parentheses following their definition. For example: Read Only Memory (ROM). Acronyms are also defined in the Glossary.

## Icons

Icons identify ports, dials, and other parts of your computer. The indicator panel also uses icons to identify the components it is providing information on.

## Keys

The keyboard keys are used in the text to describe many computer operations. A distinctive typeface identifies the key top symbols as they appear on the keyboard. For example, **Enter** identifies the Enter key.

## Key operation

Some operations require you to simultaneously use two or more keys. We identify such operations by the key top symbols separated by a plus sign (**+**). For example, **Ctrl + C** means you must hold down **Ctrl** and at the same time press **C**. If three keys are used, hold down the first two and at the same time press the third.

**ABC** — When procedures require an action such as clicking an icon or entering text, the icon's name or the text you are to type in is represented in the type face you see to the left.

## Display

ABC — Names of windows or icons or text generated by the computer that appears on its display screen is presented in the type face you see to the left.

## Messages

Messages are used in this manual to bring important information to your attention. Each type of message is identified as shown below.

*Pay attention! A caution informs you that improper use of equipment or failure to follow instructions may cause data loss or damage your equipment.*

*Please read. A note is a hint or advice that helps you make best use of your equipment.*

*Indicates a potentially hazardous situation, which could result in death or serious injury, if you do not follow instructions.*

# Chapter 1

# Introduction

This chapter provides an equipment checklist, and it identifies the computer's features, options and accessories.

*Some of the features described in this manual may not function properly if you use an operating system that was not preinstalled by TOSHIBA.*

## Equipment checklist

Carefully unpack your computer. Save the box and packing materials for future use.

### Hardware

Check to make sure you have all the following items:

- TOSHIBA L10 Series Portable Personal Computer
- Universal AC adaptor and power cord
- Modular cable for modem (optional part dependant on model purchased)

*It is necessary to install the battery to use this computer. Refer to Installing the battery pack section in Chapter 3, Getting Started.*

# Software

## Windows® XP Home Edition or Professional

The following software is preinstalled:

- Microsoft® Windows® XP Home Edition or Professional
- Modem driver
- Display driver for Windows®
- TOSHIBA Utilities
- Wireless LAN driver (Can be used only with Wireless LAN models)
- Sound driver for Windows®
- DVD Video Player
- LAN driver
- Pointing device driver
- TOSHIBA User's Manual
- TOSHIBA Console
- TOSHIBA ConfigFree
- TOSHIBA Touch and Launch
- TOSHIBA TouchPad On/Off Utility
- TOSHIBA PC Diagnostic Tool
- TOSHIBA Zooming Utility

Other software may preinstalled dependant on the model purchased.

## Documentation

- TOSHIBA L10 Series User's Manual
- TOSHIBA L10 Quickstart *
- Safety Instruction Manual
- Warranty information

## Backup Media and Addtional Software

- Product Recovery Disc
- Tools & Utilities CD-ROM *
- Additional Software CD *

* indicates an optional part that is dependant on the model purchased.

If any of the items are missing or damaged, contact your dealer immediately.

# Features

The computer uses TOSHIBA's advanced Large Scale Integration (LSI), Complementary Metal-Oxide Semiconductor (CMOS) technology extensively to provide compact size, minimum weight, low power usage, and high reliability. This computer incorporates the following features and benefits:

## Processor

| | |
|---|---|
| **Built-in** | The computer is equipped with an Intel® processor.<br>Intel® Celeron® M processor, which incorporates a 1 MB level 2 cache memory.<br>Intel® Celeron® M processor 350 (1.3GHz) or higher.<br>Intel® Pentium® M processor, which incorporates a 2 MB level 2 cache memory<br>Intel® Pentium® M processor 715 (1.5GHz) or higher<br>Other processors may introduced in the future |

## Memory

| | |
|---|---|
| **Slots** | Up to two 256 or 512 MB memory modules can be installed in the memory slot for a maximum of 1 GB system memory total. |

*Before you install a new 512 MB memory module be sure to remove any memory modules already installed.*

| | |
|---|---|
| **Video RAM** | Maximum 64 MB of RAM is provided for video display. |

## Power

| | |
|---|---|
| **Battery Pack** | Your computer is powered by a rechargeable lithium-ion battery pack (4300mAh). |

| | |
|---|---|
| **RTC Battery** | The internal RTC battery backs up the Real Time Clock and calendar. |
| **AC Adaptor** | The universal AC adaptor provides power to the system and recharges the batteries when they are low. It comes with a detachable power cord.<br>Because it is universal, it can receive a range of AC voltage from 100 to 240 volts; however, the output current varies among different models. Using the wrong model can damage your computer. Refer to the *AC adaptor* section in Chapter 2, *The Grand Tour*. |

## Disks

| | |
|---|---|
| **Hard Disk Drive** | Available in two sizes.<br>■ 40.0 billion bytes (37.26 GB)<br>■ 60.0 billion bytes (55.88 GB)<br>Other hard disk drives may introduced in the future. |
| **USB floppy disk drive (Optional)** | Accommodates either 3 ½" 1.44-megabyte or 720-kilobyte floppy disks. It connects to a USB port. |

*Computers in this series can be configured with a fixed optical media drive. The available optical media drives are described below.*

| | |
|---|---|
| **DVD-ROM & CD-R/RW drive** | Some models are equipped with a full-size, DVD-ROM & CD-R/RW drive module that lets you run CD/DVDs without using an adaptor. It reads DVD-ROMs at maximum 8 speed and CD-ROMs at maximum 24 speed. It writes CD-R at up to 24 speed and CD-RW at up to 24 speed. This drive supports the following formats:<br>■ CD-R<br>■ CD-RW<br>■ DVD-ROM<br>■ DVD-Video<br>■ CD-DA<br>■ CD-Text<br>■ Photo CD™ (Single/multi-session)<br>■ CD-ROM Mode 1, Mode 2<br>■ CD -ROM XA Mode 2 (Form1, Form 2)<br>■ Enhanced CD (CD-EXTRA) |

| | |
|---|---|
| **DVD Super Multi drive** | Some models are equipped with a full-size DVD Super Multi drive module that lets you record data to rewritable CD/DVDs as well as run either 12cm (4.72") or 8cm (3.15") CD/DVDs without using an adaptor. It reads DVD-ROMs at maximum 8 speed and CD-ROMs at maximum 24 speed. It writes CD-R at up to 24 speed,<br>CD-RW at up to 10 speed, DVD-R at maximum 8 speed, DVD-RW at maximum 4 speed. DVD+R at maximum 8 speed, and DVD+RW at maximum 4 speed.<br>DVD-RAM at maximum 3 speed. This drive supports the following formats in addition to DVD-RW & CD-R/RW drive.<br>■ DVD+R<br>■ DVD+RW<br>■ DVD-RAM<br>■ DVD-R<br>■ DVD-RW |
| **DVD Super Multi drive (Supporting Double Layer)** | Some models are equipped with a full-size DVD Super Multi drive module that lets you record data to rewritable CD/DVDs as well as run either 12cm (4.72") or 8cm (3.15") CD/DVDs without using an adaptor. It reads DVD-ROMs at maximum 8 speed and CD-ROMs at maximum 24 speed. It writes CD-R at up to 24 speed, CD-RW at up to 10 speed, DVD-R at maximum 8 speed, DVD-RW at maximum 4 speed. DVD+R at maximum 8 speed, DVD+RW at maximum 4 speed and DVD+R(DL) at maximum 2.4speed.<br>DVD-RAM at maximum 3 speed. This drive supports the following formats in addition to DVD-RW & CD-R/RW drive.<br>■ DVD+R<br>■ DVD+RW<br>■ DVD-RAM<br>■ DVD-R<br>■ DVD-RW<br>■ DVD+R (DL) |

## Display

The computer's LCD panel supports high-resolution video graphics. The screen can be set at a wide range of viewing angles for maximum comfort and readability.

| | |
|---|---|
| **Built-In** | 15.0" XGA TFT screen, 16 M colors, with the following resolution:<br>XGA, 1024 horizontal × 768 vertical pixels |
| **Graphics Controller** | Graphics controller maximizes display performance. Refer to *Display Controller and Modes* section in Appendix B, *Display Controller and Modes* for more information. |

## Keyboard

| | |
|---|---|
| **Built-In** | 84 keys or 85 keys, compatible with IBM enhanced keyboard, embedded numeric overlay, dedicated cursor control, and keys. Refer to Chapter 5, *The Keyboard*, for details. |

## Pointing Device

| | |
|---|---|
| **Built-In TouchPad** | A TouchPad and control buttons in the palm rest enable control of the on-screen pointer and scrolling of windows. |

## Ports

| | |
|---|---|
| **External Monitor** | 15-pin, analog VGA port supports VESA DDC2B compatible functions. |
| **Universal Serial Bus (USB 2.0)** | The computer has Universal Serial Bus ports that comply with the USB 2.0 standard, which enables data transfer speeds 40 times faster than the USB 1.1 standard. (The ports also support USB 1.1.) |

## Slots

| | |
|---|---|
| **PC Card** | The PC Card slot accommodates a 5 mm Type II card. |

## Multimedia

| | |
|---|---|
| **Sound System** | A Windows® Sound System compatible sound system provides speakers as well as jacks for an external microphone and headphones. |
| **Video-Out Jack (S-Video)** | The video out jack lets you transfer video data to external devices. Data output depends on the type of device connected to the S-Video cable. (Not all models support this feature.) |
| **Audio/Video Control Buttons** | Audio/Video control buttons let you use the computer's optical media drive. You can also use the buttons to control the computer's CD audio or DVD video player and Windows® Media player when the system is on. |
| **Headphone Jack** | This jack outputs analog audio signals. |
| **Microphone Jack** | A 3.5 mm mini microphone jack enables connection of a three-conductor mini jack for monaural microphone input. |

## Communications

| | |
|---|---|
| **Modem** | An internal modem provides capability for data and fax communication. It supports V.90 (V.92). The speed of data transfer and fax depends on analog telephone line conditions. It has a modem jack for connecting to a telephone line. Both of V.90 and V.92 are supported only in USA, Canada, Australia, UK, France and Germany. Only V.90 is available in other regions. |

| | |
|---|---|
| **LAN** | The computer has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T) and Fast Ethernet LAN (100 megabits per second, 100BASE-TX). |
| **Wireless LAN** | The Wireless LAN feature is not available on all models. Where present, it supports the B and G standard but it is compatible with other LAN systems based on Direct Sequence Spread Spectrum / Orthogonal Frequency Division Multiplexing radio technology that complies with the IEEE 802.11 Standard.<br>■ Automatic Transmit Rate Select mechanism in the transmit range of 54, 48, 36, 24, 18, 12, 9 and 6 Mbit/s. (IEEE 802.11g)<br>■ Automatic Transmit Rate Select mechanism in the transmit range of 11, 5.5, 2 and 1 Mbit/s. (IEEEE 802.11b)<br>■ Roaming over multiple channels<br>■ Card Power Management<br>■ Wired Equivalent Privacy (WEP) data encryption, based on 128 bit encryption algorithm.<br>■ Advanced Encryption Standard (AES) data encryption, based on 128 bit encryption algorithm. |

## *Software*

| | |
|---|---|
| **Operating System** | Windows® XP Home Edition, or Windows® XP Professional Edition operating system and TOSHIBA Utilities and drivers preinstalled on the hard disk. Refer to the *Software* section at the front of this chapter. |
| **TOSHIBA Utilities** | A number of utilities and drivers are preinstalled to make your computer more convenient to use. Refer to the *Utilities* section in this chapter. |
| **Plug and Play** | When you connect an external device to the computer or when you install a component, Plug and Play capability enables the system to recognize the connection and make the necessary configurations automatically. |

# Special features

The following features are either unique to TOSHIBA computers or are advanced features, which make the computer more convenient to use.

*Please note that the descriptions for starting some special features are based on setting the **Control Panel** to **Category View**. On **Classic view** the description is different.*

| | |
|---|---|
| **Hot Keys** | Key combinations let you quickly modify the system configuration directly from the keyboard without running a system configuration program. |
| **Keypad Overlay** | A ten-key pad is integrated into the keyboard. Refer to the *Keypad overlay* section in Chapter 5, The Keyboard, for instructions on using the keypad overlay. |
| **Power On Password** | Two levels of password security, supervisor and user, are available to prevent unauthorized access to your computer.<br>To register a supervisor password, double click the **TOSHIBA Console** on your desktop select the **Security** tab and start the **Supervisor password** utility.<br>To set a user password, click **start, Control Panel, Printers and Other Hardware, TOSHIBA HWSetup.** At **Password** tab you can register a user password. |
| **Instant Security** | The hot key function **Fn + F1** blanks the screen and disables the computer, providing data security. |
| **Display Automatic Power Off** | This feature automatically cuts off power to the internal display when there is no keyboard input for a time specified. Power is restored when any key is pressed. To specify the time click **start, Control Panel, Performance and Maintenance, Power Options**. At **Power Schemes** tab, you can select the time for **Turn off monitor**. |
| **HDD Automatic Power Off** | This feature automatically cuts off power to the hard disk drive when it is not accessed for a time specified. Power is restored when the hard disk is accessed. To specify the time, click **start, Control Panel, Performance and Maintenance, Power Options**. At **Power Schemes** tab, you can select the time for **Turn off hard disks**. |

| | |
|---|---|
| **System Automatic Standby/Hibernation** | This feature automatically shuts down the system in Standby Mode or Hibernation Mode when there is no input or hardware access for a time specified. To specify the time, click **start, Control Panel, Performance and Maintenance, Power Options**. At **Power Schemes** tab, you can select the time for **System standby** or **System hibernates**. |
| **Intelligent Power Supply** | A microprocessor in the computer's intelligent power supply detects the battery's charge and calculates the remaining battery capacity. It also protects electronic components from abnormal conditions, such as voltage overload from an AC adaptor. To monitor remaining battery capacity, click **start, Control Panel, Performance and Maintenance, Power Options**, and **Power Meter** tab. |
| **Battery Save Mode** | This feature lets you save battery power. To specify the power save mode click **start, Control Panel, Performance and Maintenance, Power Options**. At **Power schemes** tab, you can select the mode for **Power schemes**. |
| **Panel Power On/Off** | This feature turns power to the computer off when the display panel is closed and turns it back on when the panel is opened. To specify the setting, click **start, Control Panel, Performance and Maintenance, Power Options** and **Advanced** tab. |
| **Low Battery Automatic Hibernation** | When battery power is exhausted to the point that computer operation cannot be continued, the system automatically enters Hibernation Mode and shuts down. To specify the setting, click **start, Control Panel, Performance and Maintenance, Power Options** and **Alarms** tab. |
| **Hibernation** | This feature lets you turn off the power without exiting from your software. The contents of main memory are saved to the hard disk, when you turn on the power again, you can continue working right where you left off. Refer to the *Turning off the power* section in Chapter 3, Getting Started, for details. |
| **Standby** | If you have to interrupt your work, you can turn off the power without exiting from your software. Data is maintained in the computer's main memory. When you turn on the power again, you can continue working right where you left off. |

# Utilities

This section describes preinstalled utilities and tells how to start them. For details on operations, refer to each utility's online manual, help files or readme.txt files.

*Please note that the descriptions for starting some Utilities are based on setting the **Control Panel** to **Category View**. On **Classic view** the description is different.*

| | |
|---|---|
| **TOSHIBA Console** | TOSHIBA Console is a graphical user interface that provides easy access to help and services. |
| **HW Setup** | This program lets you customize your hardware settings according to the way you work with your computer and the peripherals you use. To start the utility, click the **start** and click **Control Panel**. In the **Control Panel, Printers and Other Hardware**, select the **TOSHIBA HW Setup** icon. |
| **DVD Video Player** | The DVD Video Player is used to play DVD Video. It has an on-screen interface and functions. Click **start**, point to **All Programs**, point to **InterVideo WinDVD**, then click **InterVideo WinDVD**. |
| **TOSHIBA Zooming Utility** | This utility allows you to enlarge or reduce the icon size on the desktop or the application window.<br>To run TOSHIBA Zooming Utility, click **start**, select **All Programs** followed by **TOSHIBA** followed by **Utilities** and then click **Zooming Utility**. |
| **RecordNow! Basic for TOSHIBA** | You can create CD/DVDs in several formats including audio CDs that can be played on a standard stereo CD player and data CDs to store the files and folders on your hard disk drive. This software can be used on a model with the DVD-ROM & CD-R/RW drive, and the DVD Super Multi drive. |
| **DLA for TOSHIBA** | DLA (Drive Letter Access) is the packet writing software which provides the function which writes files and/or folders to DVD+RW, DVD-RW or CD-RW disc via a drive letter like a floppy disk or other removable disks. |

| | |
|---|---|
| **TOSHIBA PC Diagnostic Tool** | TOSHIBA PC Diagnostic Tool displays basic information about the PC, and tests built-in devices. To start the TOSHIBA PC Diagnostic Tool, click **start**, point to **All Programs**, point to **TOSHIBA**, and point to **Utilities** and click **PC Diagnostic Tool**. |
| **TOSHIBA ConfigFree** | ConfigFree is a suite of utilities to allow easy control of communication device and network connections. ConfigFree also allows you to find communication problems and create profiles for easy switching between location and communication networks.<br>To run ConfigFree, click **start**, select **All Programs** followed by **TOSHIBA** followed by **Networking** and then click **ConfigFree**. |
| **TOSHIBA TouchPad On/Off Utility** | Pressing Fn + F9 enables or disables the TouchPad function. When you press these hot keys, the current setting will change and be displayed as an icon. |
| **TOSHIBA Touch and Launch** | TOSHIBA Touch and Launch is a tool that allows you to perform various tasks easily using the TouchPad. TOSHIBA Touch and Launch is useful in the following conditions.<br>■ To open a file located on the desktop whose icon is obscured by a window.<br>■ To open a page contained in the Internet<br>Explorer Favorites menu.<br>■ To display the list of currently open windows and change the active window.<br>Also TOSHIBA Touch and Launch provides the following functions by customizing the settings.<br>■ To open a file stored in a predefined folder.<br>■ To quickly launch your frequently used applications which have been registered.<br>To run TOSHIBA Touch and Launch, click **start**, select **All Programs** followed by **TOSHIBA** followed by **Utilities** and then click **Touch and Launch** |

# Options

You can add a number of options to make your computer even more powerful and convenient to use. Refer to Chapter 7 *Optional Devices*, for details. The following options are available:

| | |
|---|---|
| **Memory expansion** | A 256 or 512 MB memory module (PC2100 / PC2700 DDR) can easily be installed in the computer. (PC2700 works the same as PC2100) |
| **Battery pack** | An additional battery pack can be purchased from your TOSHIBA dealer. Use it as a spare or replacement.<br>Battery pack (4300mAh) |
| **AC Adaptor** | If you use your computer at more than one site frequently, it may be convenient to purchase an additional AC adaptor for each site so you will not have to carry the adaptor with you. |
| **USB Floppy Disk Kit** | A 3 ½" floppy disk drive accommodates 1.44-megabyte or 720-kilobyte floppy disk. It connects to a USB port. (You cannot format 720-kilobyte floppy disks on Windows® XP, but you can use previously formatted disks.) |

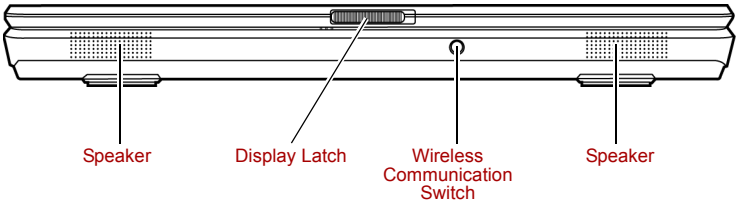
# Chapter 2

# The Grand Tour

This chapter identifies the various components of your computer. Become familiar with each component before you operate the computer.

## Front with the display closed

The following figure shows the computer's front with its display panel in the closed position.



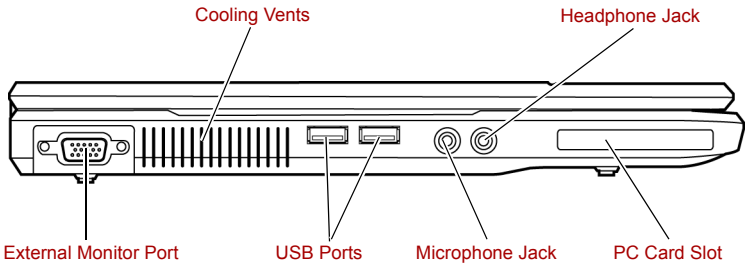

*Front of the computer with display closed*

| | |
|---|---|
| **Speakers** | The speakers emit sound generated by your software as well as audio alarms, such as low battery condition, generated by the system. |
| **Display Latch** | This latch secures the LCD panel in its closed position. Slide the latch to open the display. |
| **Wireless Communication Switch** | Press to activate or deactivate the Wireless LAN feature. (Not available on all models). |

*Set the switch to off in airplanes and hospitals. Check the wireless activity indicator. It will stop glowing when the wireless communication function is off.*

# Left side

The following figure shows the computer's left side.




*The left side of the computer*

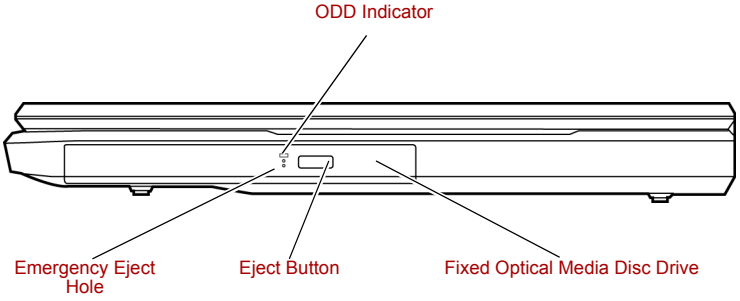
| | |
|---|---|
| **External Monitor Port** | This 15-pin port lets you connect an external video display. Analog VGA port supports VESA DDC2B compatible functions. |
| **Cooling Vents** | Cooling vents help prevent the CPU from overheating. |

*Do not block the cooling vents. Also ensure that foreign objects are kept out of the vents as items such as pins or similar objects, which can damage the computer's circuitry.*

| | |
|---|---|
| **Universal Serial Bus (USB 2.0) ports** | A pair of Universal Serial Bus ports is on the left side. The port complies with the USB 2.0 standard, which enables data transfer speeds 40 times faster than the USB 1.1 standard (The ports also support USB 1.1). Keep foreign objects out of the USB connectors. A pin or similar object can damage the computer's circuitry. Operation of all functions of all USB devices has not been confirmed. As such, some untested third-party devices may not function properly. |
| **Microphone Jack** | A 3.5 mm mini microphone jack enables connection of a three-conductor mini jack for monaural microphone input. |
| **Headphone Jack** | This jack outputs analog audio signals. |
| **PC Card Slot** | A PC Card slot can accommodate a 5 mm Type II card. The slot supports 16-bit PC Cards and CardBus PC Cards. |

# Right side

The following figure shows the computer's right side.

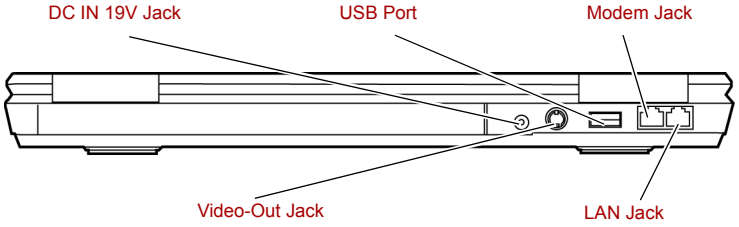



*The right side of the computer*

| | |
|---|---|
| **Fixed Optical Media Disc Drive** | The computer is configured with a full-size optical media drive module that lets you run either 12 cm (4.72") or 8 cm (3.15") disks without using an adaptor. Refer to the Fixed Optical media drive section in this chapter for technical specifications on each drive and to Chapter 4, *Operating Basics*, for information on using the drive and caring for disks.<br>The following drives are available:<br>■ DVD-ROM & CD-R/RW drive<br>■ DVD Super Multi drive<br>■ DVD Super Multi drive (Supporting Double Layer) |
| **Eject Button** | Press this to open the ODD tray. |
| **Emergency Eject Button** | In the event that the disc drive becomes inexplicably locked or stops responding press this button to force a manual ejection of the ODD tray. |
| **ODD Indicator** | The ODD indicator glows amber when the computer accesses the optical disc drive. |

# Backside

The following figure shows the computer's back panel (It differs depending on the model).

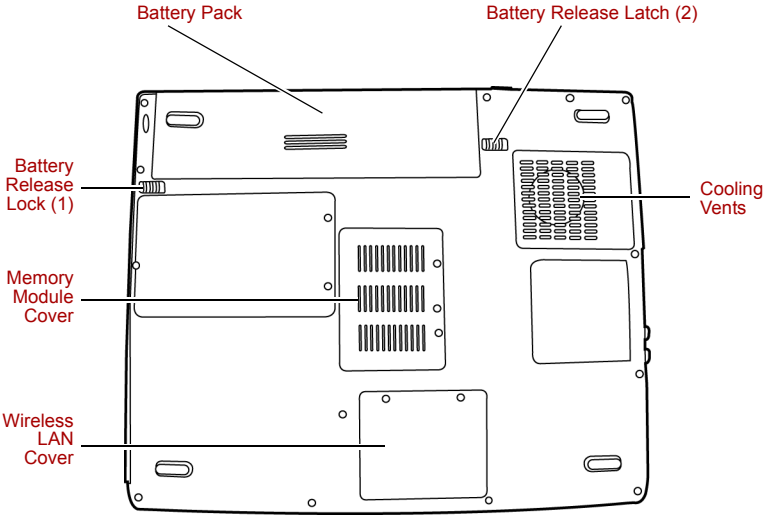



*The backside of the computer*

| | |
|---|---|
| **Universal Serial Bus (USB 2.0) port** | A Universal Serial Bus port is on the right side. Refer to the *Left side* section, for details. |
| **DC IN 19V Jack** | The AC adaptor connects to this socket. Use only the model of AC adaptor that comes with the computer. Using the wrong adaptor can damage your computer. |
| **Video-Out Jack** | Plug an S-Video cable into this jack for video-out. The S-Video cable carries video signals. (Not available on all models) |
| **Modem Jack** | In areas where an internal modem is installed as standard equipment, there is a modem jack that lets you use a modular cable to connect the modem directly to a telephone line.<br>■ In case of a lightning storm, unplug the modem cable from the telephone jack.<br>■ Do not connect the modem to a digital telephone line. A digital line will damage the modem. |
| **LAN Jack** | This jack lets you connect to a LAN. The adaptor has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T), Fast Ethernet LAN (100 megabits per second, 100BASE-TX). Refer to Chapter 4, *Operating Basics*, for details. |

# Underside

The following figure shows the underside of the computer. Make sure the display is closed before turning over your computer.

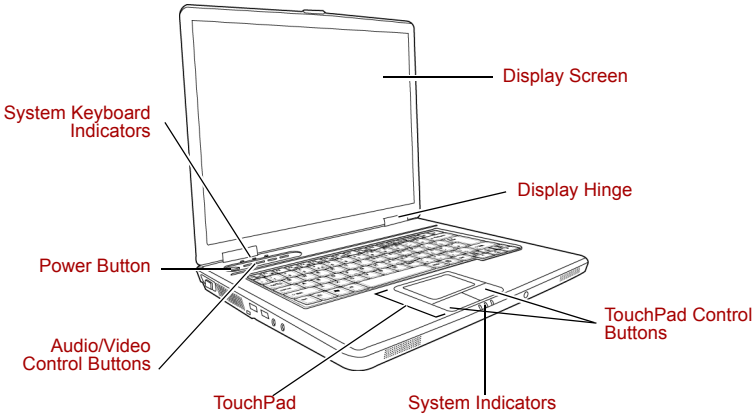



*The underside of the computer*

| | |
|---|---|
| **Battery Release Lock (1)** | Slide this lock to prepare the battery pack for removal. |
| **Battery Release Latch (2)** | Slide and hold this latch to release the battery pack for removal. For detailed information on removing the battery packs, refer to Chapter 6, *Power and Power-Up Modes*. |
| **Battery Pack** | The battery pack powers the computer when the AC adaptor is not connected. For detailed information on the battery pack, refer to Chapter 6, *Power and Power-Up Modes*. |
| **Memory Module Cover** | This cover protects two memory module socket -- one module is preinstalled. Refer to the *Memory expansion* section in Chapter 7, Optional Devices. |
| **Wireless LAN Cover** | This cover protects the Wireless LAN bay and, if installed, the Wireless LAN card. (Not all models support this feature.) |
| **Cooling Vents** | Cooling vents help prevent the CPU from overheating. |

# Front with the display open

This section shows the front of the computer with the display open. Refer to the appropriate illustration for details. To open the display, slide the display latch on the front of the display and lift up. Position the display at a comfortable viewing angle.

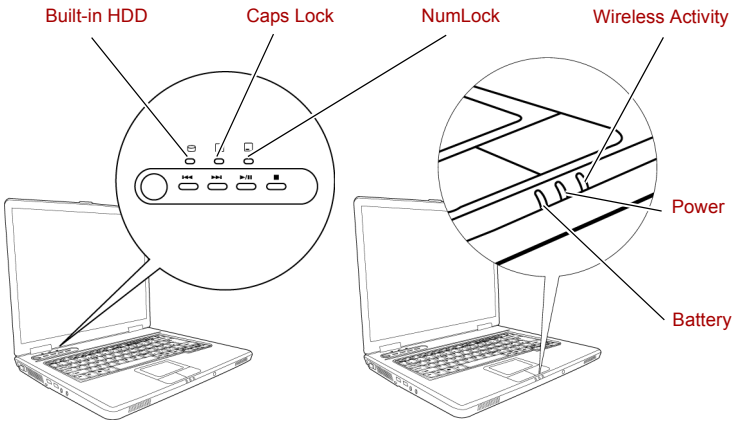



*The front of the computer with the display open*

| | |
|---|---|
| **Power Button** | Turns the computer on and off as well as puts it into Hibernation mode and wakes it up from said mode. |
| **System Indicators** | LEDs let you monitor the status of various computer functions (Battery charge, Power, Wireless activity, HDD activity, CapsLock status, and NumLock status). Details are given in the System indicators section. |
| **Audio/Video Control Buttons** | Previous ⏮ button: Plays the previous track/chapter/data.<br>Next ⏭ button: Plays the next track/chapter/data.<br>Play/pause ⏯ button: Begins or pauses play.<br>Stop ⏹ button: Stops play.<br>Refer to Chapter 4, *Operating Basics*. |
| **Display Hinge** | The display hinge holds the display screen at easy-to-view angles. |

| | |
|---|---|
| **Display Screen** | The LCD displays high-contrast text and graphics. Refer to *Display Controller and Modes* section in Appendix B, *Display Controller and Modes*. When the computer operates on the AC adaptor the display screen's image will be somewhat brighter than when it operates on battery power. The lower brightness level is intended to save battery power. |
| **TouchPad** | A TouchPad located in the center of the palm rest is used to control the on-screen pointer. |
| **TouchPad Control Buttons** | These let you select menu items or manipulate text and graphics designated by the on-screen pointer. Refer to the *Using the TouchPad* section in Chapter 4, *Operating Basics*. |

# System & Keyboard indicators

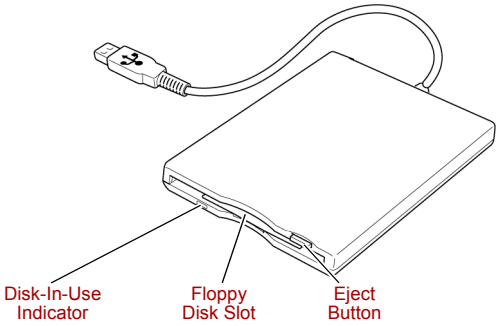



*System & Keyboard overlay indicators*

| | | |
|---|---|---|
| | **Power** | The Power indicator glows green when the computer is on. If you select Standby from Shutdown windows, this indicator flashes orange (one second on, two seconds off) while the computer shuts down. |
| | **Battery** | The Battery indicator shows the condition of the battery's charge: Green indicates full charge, orange indicates battery charging and flashing orange indicates a low battery charge. Refer to Chapter 6, *Power and Power-Up Modes*. |
| | **Wireless Activity** | Shows you Wireless LAN activity, and whether the Wireless LAN feature is engaged or not. Not available on all models. |
| | **Built-in HDD/ODD** | The Built-in HDD/ODD indicator glows green when the computer accesses the hard disk drive or and optical disk drive. |
| A | **Caps Lock** | This indicator glows green when the alphabet keys are locked in uppercase. |
| | **NumLock** | You can use the keypad overlay (gray labeled keys) for numeric input when the Numeric mode indicator lights green. Refer to the *Keypad overlay* section in Chapter 5, *The Keyboard*. |

# USB floppy disk drive (optional)

An optional 3 ½" floppy disk drive accommodates 1.44-megabyte or 720-kilobyte floppy disks. It connects to the USB port.




*USB floppy disk drive*

| | |
|---|---|
| **Disk-In-Use Indicator** | This indicator lights when the floppy disk is being accessed. |
| **Floppy Disk Slot** | Insert a floppy disk in this slot. |
| **Eject Button** | When a floppy disk is fully seated in the drive, the eject button pops out. To remove a floppy disk, push in the eject button and the floppy disk pops out partially for removal. |

*Check the* **Disk-In-Use** *indicator when you use the floppy disk drive. Do not press the eject button or turn off the computer while the light is glowing. Doing so could destroy data and damage the floppy disk or the drive.*

- *The external floppy disk drive should be placed on a flat, horizontal surface when in use. Do not set the drive on an incline greater than 20 $^{o}$ while it is operating.*
- *Do not set anything on top of the floppy disk drive.*

# Fixed optical media drives

One of the following optical media drives is installed in the computer: DVD-ROM & CD-R/RW or DVD Super Multi drives. An ATAPI interface controller is used for CD/DVD-ROM operation. When the computer is accessing a CD/DVD, an indicator on the drive glows.

## Region codes for DVD drives and media

DVD-ROM & CD-R/RW and the DVD Super Multi drives and their associated media are manufactured according to the specifications of six marketing regions. When you purchase DVD-Video, make sure it matches your drive, otherwise it will not play properly.

| Code | Region |
|---|---|
| **1** | Canada, United States |
| **2** | Japan, Europe, South Africa, Middle East |
| **3** | Southeast Asia, East Asia |
| **4** | Australia, New Zealand, Pacific Islands, Central America, South America, Caribbean |
| **5** | Russia, Indian Subcontinent, Africa, North Korea, Mongolia |
| **6** | China |

## Writable discs

This section describes the types of writable CD/DVD discs. Check the specifications for your drive for the type of discs it can write. Use RecordNow! to write compact discs. Refer to Chapter 4, *Operating Basics*.

## CDs

- CD-R discs can be written only once. The recorded data cannot be erased or changed.
- CD-RW discs can be recorded more than once. Use either 1, 2, or 4 multi speed CD-RW discs or high-speed 4- to 10-speed discs. The write speed of the ultra-speed CD-RW discs (Ultra-speed is available on the DVD-ROM & CD-R/RW drive only) is a maximum of 24-speed.

## DVDs

- DVD-R discs can be written only once. The recorded data cannot be erased or changed.
- DVD-RW discs can be recorded more than once.
- DVD-RAM discs can be recorded more than once.
- DVD+R discs can be written only once. The recorded data cannot be erased or changed.
- DVD+RW discs can be recorded more than once.

## Formats

The drives support the following formats:

- DVD-ROM
- CD-DA
- Photo CD™ (single/multi-session)
- CD-ROM XA Mode 2 (Form1, Form2)
- CD-R
- DVD -Video
- CD-Text
- CD-ROM Mode 1, Mode 2
- Enhanced CD (CD-EXTRA)
- CD-RW

## DVD-ROM & CD-R/RW drive

The full-size DVD-ROM and CD-R/RW drive module lets you record data to rewritable CDs as well as run either 12 cm (4.72") or 8 cm (3.15") CD/DVDs without using an adaptor.

*The read speed is slower at the center of a disc and faster at the outer edge.*

| | |
|---|---|
| **DVD read** | 8 speed (maximum) |
| **CD read** | 24 speed (maximum) |
| **CD-R write** | 24 speed (maximum) |
| **CD-RW write** | 24 speed (maximum, Ultra speed media) |

## DVD Super Multi drive

The full-size DVD Super Multi drive module lets you record data to rewritable CD/DVDs as well as run either 12 cm (4.72") or 8 cm (3.15") CD/DVDs without using an adaptor.

*The read speed is slower at the center of a disc and faster at the outer edge.*

| | |
|---|---|
| **DVD read** | 8 speed (maximum) |
| **DVD-R write** | 8 speed (maximum) |
| **DVD-RW write** | 4 speed (maximum) |
| **DVD+R write** | 8 speed (maximum) |
| **DVD+RW write** | 4 speed (maximum) |
| **DVD-RAM write** | 3 speed (maximum) |
| **CD read** | 24 speed (maximum) |
| **CD-R write** | 24 speed (maximum) |
| **CD-RW write** | 10 speed (maximum, Ultra-speed media) |

## DVD Super Multi drive (Supporting Double Layer)

The full-size DVD Super Multi drive module lets you record data to rewritable CD/DVDs as well as run either 12 cm (4.72") or 8 cm (3.15") CD/DVDs without using an adaptor.

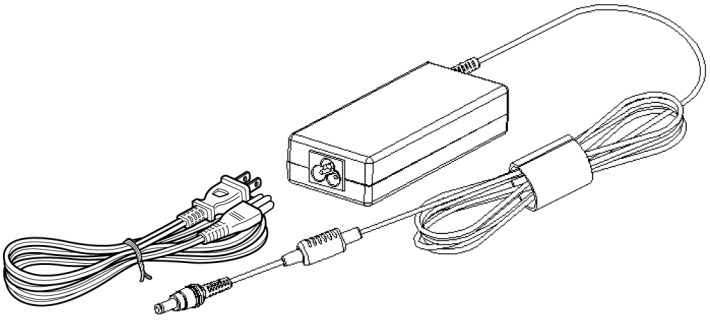
*The read speed is slower at the center of a disc and faster at the outer edge.*

| | |
|---|---|
| **DVD read** | 8 speed (maximum) |
| **DVD-R write** | 8 speed (maximum) |
| **DVD-RW write** | 4 speed (maximum) |
| **DVD+R write** | 8 speed (maximum) |
| **DVD+RW write** | 4 speed (maximum) |
| **DVD+R(DL) write** | 2.4 speed (maximum) |
| **DVD-RAM write** | 3 speed (maximum) |
| **CD read** | 24 speed (maximum) |
| **CD-R write** | 24 speed (maximum) |
| **CD-RW write** | 10 speed (maximum, Ultra-speed media) |

# AC adaptor

The AC adaptor converts AC power to DC power and reduces the voltage supplied to the computer. It can automatically adjust to any voltage from 100 to 240 volts and to a frequency of either 50 or 60 hertz, enabling you to use the computer in almost any country/region.

To recharge the battery, simply connect the AC adaptor to a power source and the computer. Refer to Chapter 6, *Power and Power-Up Modes*, for details.



*The AC adaptor*

- *Use only the AC adaptor that came with the computer or an equivalent optional adaptor. Use of the wrong adaptor could damage your computer. TOSHIBA assumes no liability for any damage in such case.*
- *Use only the AC Adaptor supplied with your computer or an equivalent adapter that is compatible. Use of any incompatible adaptor or other types of AC Adaptors may have a different voltage which could cause damage to your computer, computer failure and/or possible data loss. Toshiba assumes no liability for any damage, computer failure and/or data loss caused by use of an incompatible adaptor.*

*Use only the AC adaptor supplied as an accessory. Other AC adaptors have different voltage and terminal polarities and use of them may produce heat and smoke or even result in fire or rupture.*

# Chapter 3

# Getting Started

This chapter provides basic information to get you started using your computer. It covers the following topics:

- Setting up your work space — for your health and safety

*Be sure also to read the Safety Instruction Manual. This guide, which is included with the computer, explains product liability.*

- Installing the battery pack
- Connecting the AC adaptor
- Opening the display
- Turning on the power
- Windows® XP setup
- Turning off the power
- Restarting the computer
- Restoring the preinstalled software

*All users should be sure to read the section Windows® XP setup.*

# Setting up your work space

Establishing a comfortable work site is important for you and your computer. A poor work environment or stressful work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. Proper ambient conditions should also be maintained for the computer's operation. This section discusses the following topics:

- General conditions
- Placement of the computer
- Seating and posture
- Lighting
- Work habits

## General conditions

In general, if you are comfortable, so is your computer, but read the following to make sure your work site provides a proper environment.

- Make sure there is adequate space around the computer for proper ventilation.
- Make sure the AC power cord connects to an outlet that is close to the computer and easily accessible.
- The temperature should be 5 to 35 degrees Centigrade (41 to 95 degrees Fahrenheit) and the relative humidity should be 20 to 80 percent.
- Avoid areas where rapid or extreme changes in temperature or humidity may occur.
- Keep the computer free of dust, moisture, and exposure to direct sunlight.
- Keep the computer away from heat sources, such as electric heaters.
- Do not use the computer near liquids or corrosive chemicals.
- Do not place the computer near objects that create strong magnetic fields (e.g., stereo speakers).
- Some components in the computer, including data storage media, can be damaged by magnets. Do not place the computer near magnetic objects or bring magnetic objects close to the computer. Be careful of objects, such as stereo speakers, that produce strong magnetic fields during operation. Also, be careful with metal objects, such as bracelets, which can be inadvertently magnetized.
- Do not operate the computer in close proximity to a mobile phone.
- Leave ample ventilation room for the fan. Do not block the vents.

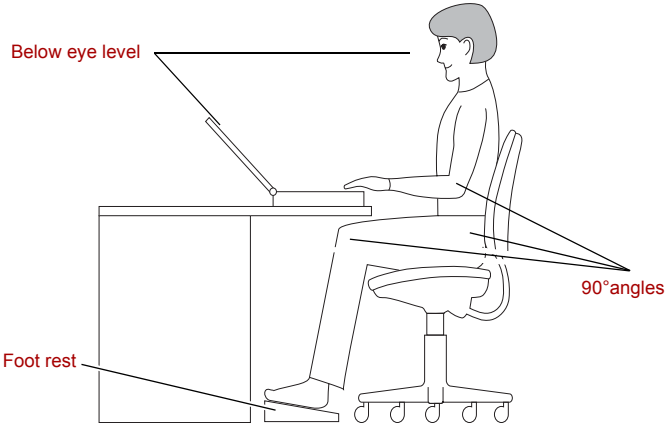
## Placement of the computer

Position the computer and peripheral devices to provide comfort and safety.

- Set the computer on a flat surface at a comfortable height and distance.
- The display should be no higher than eye level to avoid eyestrain.
- Place the computer so that it is directly in front of you when you work and make sure you have adequate space to easily operate other devices.
- Allow adequate space behind the computer to let you freely adjust the display. The display should be angled to reduce glare and maximize visibility.
- If you use a paper holder, set it at about the same height and distance as the computer.

## Seating and posture

The height of your chair in relation to the computer and keyboard as well as the support it gives your body are primary factors in reducing work strain. Refer to the following tips and to the following figure.




*Posture and positioning of the computer*

- Place your chair so that the keyboard is at or slightly below the level of your elbow. You should be able to type comfortably with your shoulders relaxed.
- Your knees should be slightly higher than your hips. If necessary, use a foot rest to raise the level of your knees to ease pressure on the back of your thighs.
- Adjust the back of your chair so it supports the lower curve of your spine.
- Sit straight so that your knees, hips and elbows form approximately 90 degree angles when you work. Do not slump forward or lean back too far.

## Lighting

Proper lighting can improve legibility of the display and reduce eyestrain.

- Position the computer so that sunlight or bright indoor lighting does not reflect off the screen. Use tinted Windows, shades or other screen to eliminate sun glare.
- Avoid placing the computer in front of bright light that could shine directly in your eyes.
- If possible, use soft, indirect lighting in your computer work area. Use a lamp to illuminate your documents or desk, but be sure to position the lamp so that it does not reflect off the display or shine in your eyes.

## Work habits

A key to avoiding discomfort or injury from repetitive strain is to vary your activities. If possible, schedule a variety of tasks into your workday. If you must spend long periods at the computer, finding ways to break up the routine can reduce stress and improve your efficiency.

- Sit in a relaxed posture. Good positioning of your chair and equipment as described earlier can reduce tension in your shoulders or neck and ease back strain.
- Vary your posture frequently.
- Occasionally stand up and stretch or exercise briefly.
- Exercise and stretch your wrists and hands a number of times during the day.
- Frequently, look away from the computer and focus your eyes on a distant object for several seconds, for example 30 seconds every 15 minutes.
- Take frequent short breaks instead of one or two long breaks, for example, two or three minutes every half hour.
- Have your eyes examined regularly and visit a doctor promptly, if you suspect you might be suffering from a repetitive strain injury.

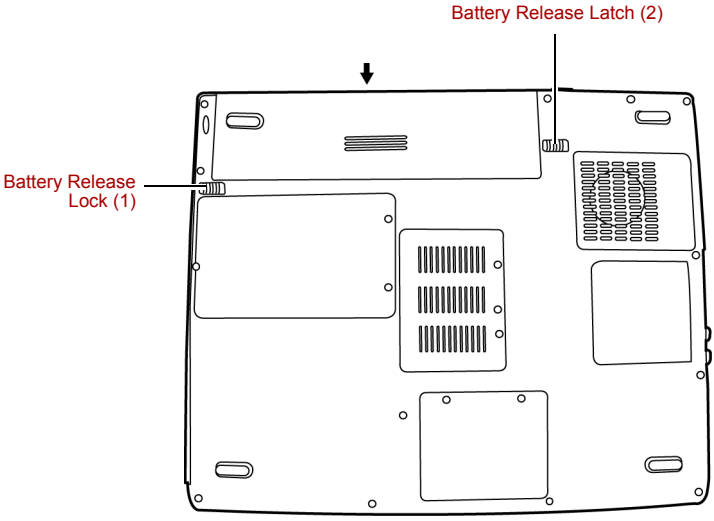
A number of books are available on ergonomics and repetitive strain injury or repetitive stress syndrome. For more information on these topics or for pointers on exercises for such stress points as hands and wrists, please check with your library or book vendor. Also refer to the computer's *Safety Instruction Manual*.

# Installing the battery pack

To install a battery, follow the steps below.

- *The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.*
- *Do not touch the latch while holding the computer. Or you may get injured by the dropped battery by unintentional release of the latch.*
- *Please do not push the power button before installing the battery pack.*

1. Turn the computer's power off.
2. Disconnect all cables connected to the computer.
3. Insert the battery pack. The Battery Release Latch (2) clicks into place.
4. Secure the Battery Release Lock (1) to ensure the battery is locked into place. Later, when you want to remove the battery you must disengage this lock first.




*Securing the battery pack*

*Refer to Removing the battery pack section in Chapter 6, Power and Power-Up Modes, for removing the battery pack.*

# Connecting the AC adaptor

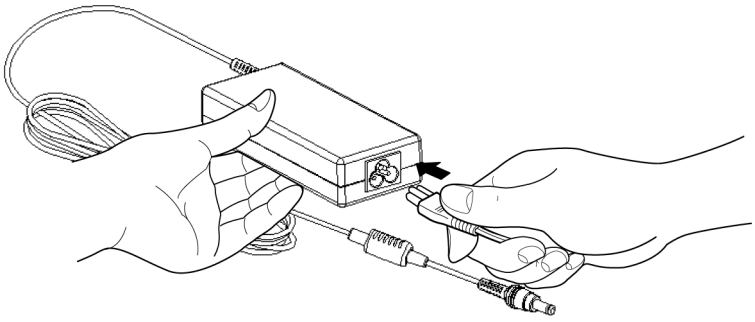
Attach the AC adaptor when you need to charge the battery or you want to operate from AC power. It is also the fastest way to get started, because the battery pack will need to be charged before you can operate from battery power.

The AC adaptor can be connected to any power source supplying from 100 to 240 volts and 50 or 60 hertz. For details on using the AC adaptor to charge the battery pack, refer to Chapter 6, *Power and Power-Up Modes*.

*Use only the AC adaptor supplied as an accessory. Other AC adaptors have different voltage and terminal polarities and use of them may produce heat and smoke or even result in fire or rupture.*

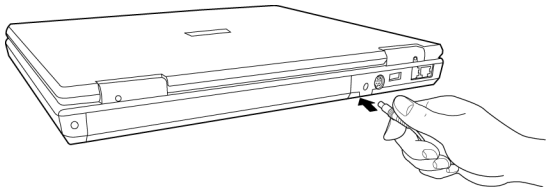
- *Use only the AC adaptor supplied with your computer or an equivalent adaptor that is compatible. Use of any incompatible adaptor could damage your computer. TOSHIBA assumes no liability for any damage caused by use of an incompatible adaptor.*
- *When you connect the AC adaptor to the computer, always follow the steps in the exact order as described in the User's Manual. Connecting the power cable to a live electrical outlet should be the last step otherwise the adaptor DC output plug could hold an electrical change and cause an electrical shock or minor bodily injury when touched. As a general safety precaution, avoid touching any metal parts.*

1. Connect the power cord to the AC adaptor.



*Connecting the power cord to the AC adaptor*

2. Connect the AC adaptor's DC output plug to the **DC IN 19V** jack on the back of the computer.



*Connecting the adaptor to the computer*

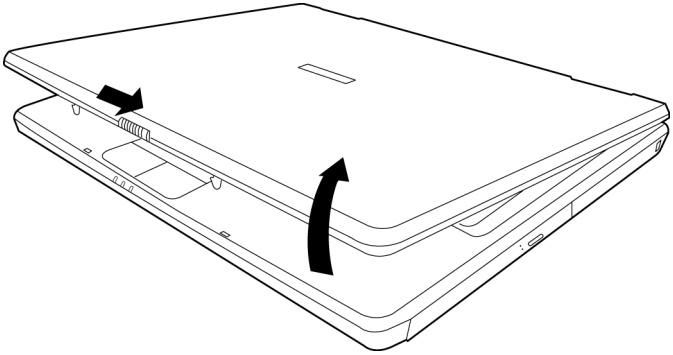
3. Plug the power cord into a live wall outlet.

# Opening the display

The display panel can be rotated in a wide range of angles for optimal viewing.

1. Slide the display latch on the front of the computer to the right.
2. Lift the panel up and adjust it to the best viewing angle for you.

*Use reasonable care when opening and closing the display panel. Opening it vigorously or slamming it shut could damage the computer.*



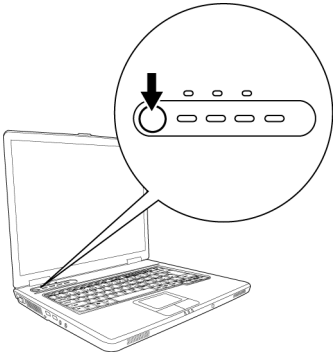
*Opening the display*

# Turning on the power

This section describes how to turn on the power.

*After you turn on the power for the first time, do not turn it off until you have set up the operating system. Refer to the section Windows® XP setup.*

1. If an optional external floppy disk drive is connected, make sure it is empty. If a floppy disk is in the drive, press the eject button and remove the floppy disk.
2. Open the display.
3. Press and hold the computer's power button for two or three seconds.



*Turning on the power*

# Windows® XP setup

When you first turn on the power, the computer's initial screen is the Microsoft® Windows® XP Home Edition or Professional Edition Startup Screen Logo.

Follow the on-screen directions.

Be sure to read the **`Windows End User License Agreement`** display carefully.

# Turning off the power

The power can be turned off in one of the following modes: Shut down (Boot), Hibernation or Standby Mode.

## Shut Down mode (Boot mode)

When you turn off the power in Shut Down mode no data is saved and the computer will boot to the operating system's main screen.

1. If you have entered data, save it to the hard disk or to a floppy disk drive.
2. Make sure all disk (disc) activity has stopped, then remove the CD/DVDs or floppy disk drive.

*Make sure the* **Built-in HDD/ODD** *indicators are off. If you turn off the power while a disk (disc) is being accessed, you can lose data or damage the disk (disc).*

3. Click **start** then click **Turn Off Computer**. From the `Turn Off Computer` menu select **Turn Off**.
4. Turn off the power to any peripheral devices.

*Do not turn the computer or devices back on immediately. Wait a moment to let all capacitors fully discharge.*

## Hibernation Mode

The hibernation feature saves the contents of memory to the hard disk when the computer is turned off. The next time the computer is turned on, the previous state is restored. The hibernation feature does not save the status of peripheral devices.

- *Save your data. While entering Hibernation Mode, the computer saves the contents of memory to the HDD. However, for safety sake, it is best to save your data manually.*
- *Data will be lost if you remove the battery or disconnect the AC adaptor before the save is completed. Wait for the Disk indicator to go out.*
- *Do not install or remove a memory module while the computer is in Hibernation Mode. Data will be lost.*

## Benefits of Hibernation Mode

The Hibernation Mode feature provides the following benefits:

- Saves data to the hard disk when the computer automatically shuts down because of a low battery.

*For the computer to shut down in Hibernation Mode, the hibernation feature must be enabled in the Hibernate tab in Power Options.*

*Otherwise, the computer will shut down in Standby Mode. If battery power becomes depleted, data saved in Standby Mode will be lost.*

- You can return to your previous working environment immediately when you turn on the computer.
- Saves power by shutting down the system when the computer receives no input or hardware access for the duration set by the System hibernate feature.
- You can use the panel power off feature.

## Starting Hibernation Mode

*You can also enable Hibernation Mode by pressing* **Fn + F4**. *Refer to Chapter 5, The Keyboard, for details.*

To enter Hibernation Mode, follow the steps below.

1. Click **start**.
2. Select **Turn Off Computer**.
3. Open the **Turn Off Computer** dialog box. `Hibernate` is not displayed.
4. Press the **Shift** key. The `Standby` item will change to `Hibernate`.
5. Select **Hibernate**.

## Automatic Hibernation Mode

The computer will enter Hibernate mode automatically when you press the power button or close the Display Screen. First, however, make the appropriate settings according to the steps below.

1. Open the **Control Panel**.
2. Open **Performance and Maintenance** and open **Power Options**.
3. Select the **Hibernate** tab in the `Power Options Properties`, select the **Enable hibernation** check box and click the **Apply** button.
4. Click the **OK** button.

### Data save in Hibernation Mode

When you turn off the power in Hibernation Mode, the computer takes a moment to save current memory data to the hard disk. During this time, the **Disk** indicator will light.

After you turn off the computer and memory is saved to the hard disk, turn off the power to any peripheral devices.

*Do not turn the computer or devices back on immediately. Wait a moment to let all capacitors fully discharge.*

## Standby Mode

If you have to interrupt your work, you can turn off the power without exiting from your software. Data is maintained in the computer's main memory. When you turn on the power again, you can continue working right where you left off.

- *When the AC adaptor is connected, the computer will go into Standby Mode according to the settings in the Power Options.*
- *To restore operation from Standby Mode, press the power button or press any key. The latter action works only if Wake-up on Keyboard is enabled in HW Setup.*
- *If the computer automatically enters Standby Mode while a network application is active, the application might not be restored when the computer wakes up from Standby.*
- *To prevent the computer from automatically entering Standby Mode, disable Standby in the Power Options. That action, however, will nullify the computer's Energy Star compliance.*

- *Before entering Standby Mode, be sure to save your data.*
- *Do not install or remove a memory module while the computer is in Standby Mode. The computer or the module could be damaged.*
- *Do not remove the battery pack while the computer is in Standby Mode (unless the computer is connected to an AC power source). Data in memory will be lost.*
- *If you carry the computer on board an aircraft or into a hospital, be sure to shut down the computer in Hibernation Mode or in shutdown mode to avoid radio signal interference.*

### Benefits of Standby Mode

The Standby Mode feature provides the following benefits:

- Restores the previous working environment more rapidly than does Hibernation Mode.
- Saves power by shutting down the system when the computer receives no input or hardware access for the duration set by the System Standby feature.
- You can use the panel power off feature.

### Entering Standby Mode

You can enter Standby Mode in one of three ways:

1. Click **Start**, click **Turn Off Computer** and click **Stand by**.
2. Close the display panel.
3. Press the power button.

When you turn the power back on, you can continue where you left when you shut down the computer.

*You can also enable Standby by pressing* **Fn + F3**. *Refer to Chapter 5, The Keyboard, for details.*

- *When the computer is shut down in Standby Mode, the power indicator flashes orange.*
- *If you are operating the computer on battery power, you can lengthen the operating time by shutting down in Hibernation Mode, as Standby Mode consumes more power.*

### Standby Mode limitations

Standby Mode will not function under the following conditions:

- Power is turned back on immediately after shutting down.
- Memory circuits are exposed to static electricity or electrical noise.

## Restarting the computer

Certain conditions require that you reset the system. For example, if:

- You change certain computer settings.
- An error occurs and the computer does not respond to your keyboard commands.
- There are three ways to reset the computer system:

1. Click **start** then click **Turn off computer**. From the `Turn off computer` menu select **Restart**.
2. Press **Ctrl + Alt + Del** to display the `Windows® Task Manager`, then select **Shutdown** and **Restart**.
3. Press the power button and hold it down for five seconds. Wait 10 to 15 seconds, then turn the power on again by pressing the power button.

# Restoring the preinstalled software

If preinstalled files are damaged, use the Product Recovery Disc to restore them.

## Restoring the complete system

To restore the operating system and all preinstalled software, follow the steps below.

*When you reinstall the Windows® operating system, the hard disk will be reformatted and all data will be lost.*

1. Load the Product Recovery Disc in the optical media drive and turn off the computer's power.
2. Wait 10 to15 seconds, then turn on the computer again.
3. When **`In Touch with Tomorrow TOSHIBA`** appears, press the **F12** key.
4. Use the up or down cursor key to select the **CD-ROM/DVD-ROM** icon in the display menu.
5. Follow the on-screen instructions.
6. If your computer came with additional software installed, this software can not be recovered from the Product Recovery disk. Re-install these applications (e.g. Works Suite, DVD Player, Games, etc.) separately from other media.

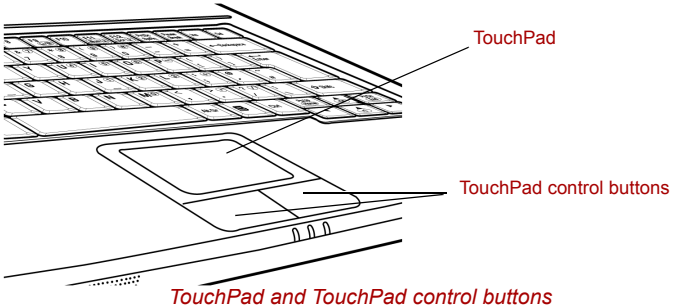
# Chapter 4

# Operating Basics

This chapter gives information on basic operations including using the TouchPad, the optional USB floppy disk drive, optical media drives, audio/video controls, sound system, modem, the wireless LAN and LAN. It also provides tips on caring for your computer and on heat dispersal.

## Using the TouchPad

To use the TouchPad, simply touch and move your finger tip across it in the direction you want the on-screen pointer to go.




*TouchPad and TouchPad control buttons*

Two buttons below the keyboard are used like the buttons on a mouse pointer. Press the left button to select a menu item or to manipulate text or graphics designated by the pointer. Press the right button to display a menu or other function depending on the software you are using.

*Do not press on the TouchPad too hard or press a sharp object such as a ball point pen against the TouchPad. The TouchPad could be damaged.*

For some functions, you can tap the TouchPad instead of pressing a control button.

**Click:** *Tap the TouchPad once*

**Double-click:** *Tap the TouchPad twice*

**Drag and drop:**

*1. Hold down the left control button and move the cursor to drag the item you want to move.*

*2. Lift your finger to drop the item where you want it.*

**Scroll:**

*Vertical: Move your finger up or down the right edge of the TouchPad.*

*Horizontal: Move your finger left or right along the bottom edge of the TouchPad.*

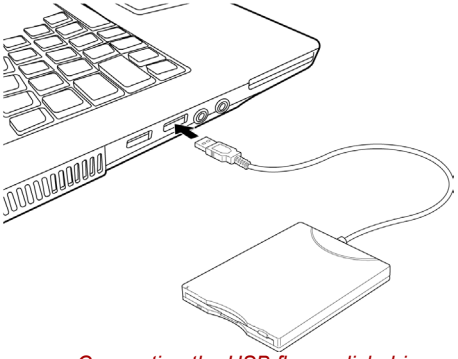
# Using the USB floppy disk drive

An optional 3 ½" floppy disk drive connects to the computer's USB port. It accommodates 1.44-megabyte or 720-kilobyte floppy disks. Refer to Chapter 2, *The Grand Tour*, for more information.

## Connecting 3 ½" floppy disk drive

To connect the drive, plug the floppy disk drive connector into a USB port. Refer to the following figure.

*Make sure the connector is right side up and properly aligned with the socket. Do not try to force the connection; doing so can damage the connecting pins.*



*Connecting the USB floppy disk drive*

*If you connect the floppy disk drive after turning on the computer, it will take about 10 seconds for the computer to recognize the drive. Do not disconnect and reconnect before 10 seconds have elapsed.*

### Disconnecting 3 ½" floppy disk drive

When you have finished using the floppy disk drive, follow the procedures below to disconnect it:

1. Wait for the indicator light to go out to make sure all floppy disk activity has stopped.

*If you disconnect the floppy disk drive or turn off the power while the computer is accessing the drive you may lose data or damage the floppy disk or the drive.*

2. Click the **Safely Remove Hardware** icon on the Task Bar.
3. Click **floppy disk drive**.
4. Pull the floppy disk drive connector out of the USB port.

## Using the optical media drive

The text and illustrations in this section refer primarily to the optical DVD-ROM drive. However, operation is the same for all other optical media drives. The full-size drive provides high-performance execution of CD/DVD-ROM-based programs. You can run either 12 cm (4.72") or 8 cm (3.15") CD/DVDs without an adaptor. An ATAPI interface controller is used for CD/DVD-ROM operation. When the computer is accessing a CD/DVD-ROM, an indicator on the drive glows.

*Use the WinDVD application to view DVD movie discs.*

If you have a DVD-ROM and CD-R/RW drive, refer also to the *Writing CDs with the DVD-ROM and CD-R/RW drive* section for precautions on writing to CDs/DVDs.

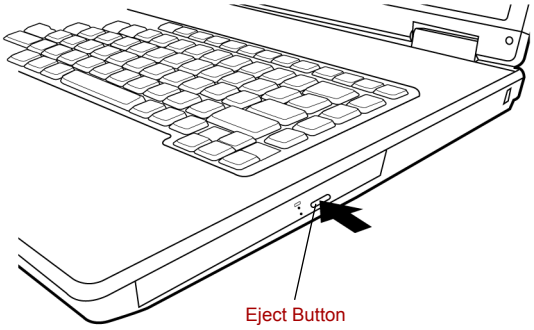
If you have a DVD Super Multi drive, refer also to the *Writing CD/DVDs with the DVD Super Multi drive* section for precautions on writing to CDs/DVDs.

If you have a DVD Super Multi drive( Supporting Double Layer), refer also to the *Writing CD/DVDs with the DVD Super Multi drive* section for precautions on writing to CDs/DVDs.

## Loading discs

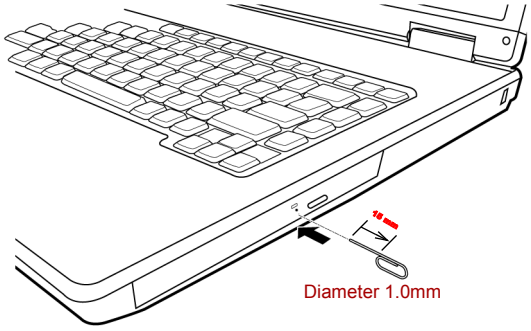
To load a disc, follow the steps below and refer to the figures.

1. a. When the power is on, press the DVD-ROM eject button to open the drawer slightly.



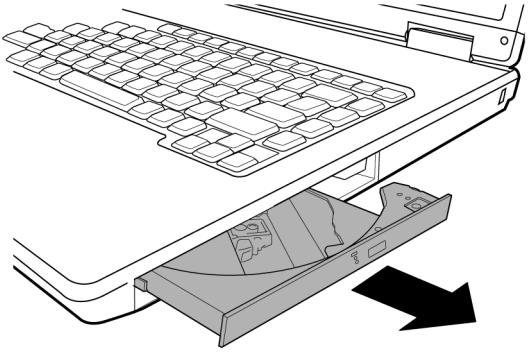

*Pressing the DVD-ROM eject button*

b. Pressing the eject button will not open the drawer when the disc drive's power is off. If the power is off, you can open the drawer by inserting a slender object (about 15 mm) such as a straightened paper clip into the eject hole just to the right of the eject button.



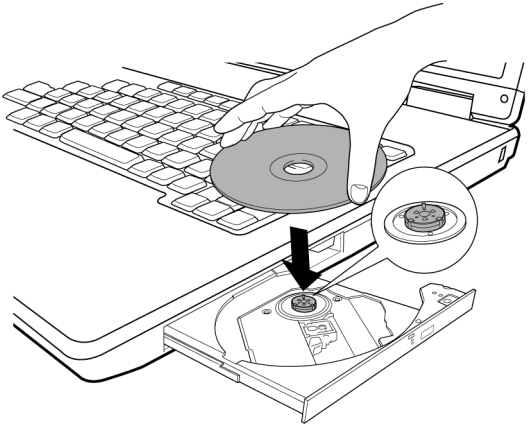

*Manual release with the eject hole*

2. Grasp the drawer gently and pull until it is fully opened.



*Pulling the drawer open*

3. Place the disc, label side up, in the drawer.



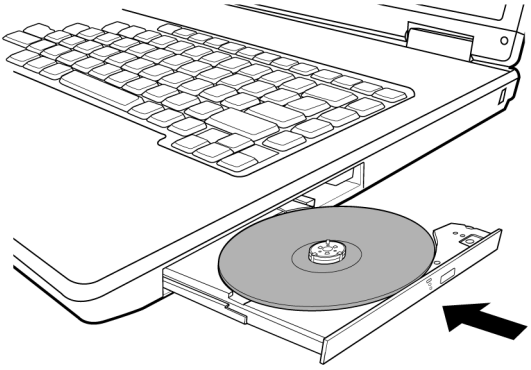
*Inserting a disc*

*When the drawer is fully opened, the edge of the computer will extend slightly over the disc tray. Therefore, you will need to turn the disc at an angle when you place it in the tray. After seating the disc, however, make sure it lies flat, as shown in the figure above.*

- *Do not touch the laser lens. Doing so could cause misalignment.*
- *Keep foreign matter from entering the drive. Check the back edge of the tray to make sure it carries no debris before closing the drive.*

4. Press gently at the center of the disc until you feel it click into place. The disc should lie below the top of the spindle, flush with the spindle base.
5. Push the center of the drawer to close it. Press gently until it locks into place.

*If the CD/DVD is not seated properly when the drawer is closed, the disc might be damaged. Also, the drawer might not open fully when you press the eject button.*



*Closing the disc drawer*

## Removing discs

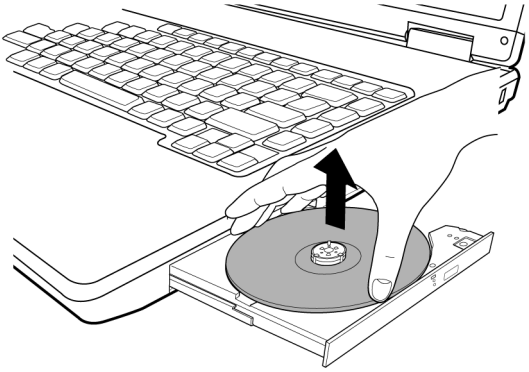
To remove the disc, follow the steps below and refer to the figure.

*Do not press the eject button while the computer is accessing the disc drive. Wait for the optical media drive indicator to go out before you open the drawer. Also, if the disc is spinning when you open the drawer, wait for it to stop before you remove it.*

1. To pop the drawer partially open, press the eject button. Gently pull the drawer out until it is fully opened.

- When the drawer pops open slightly, wait a moment to make sure the disc has stopped spinning before pulling the drawer fully open.
- Turn off the power before you use the eject hole. If the disc is spinning when you open the drawer, the disc could fly off the spindle and cause injury.

2. The disc extends slightly over the sides of the drawer so you can hold it. Hold the disc gently and lift it out.



*Removing a CD/DVD*

3. Push the center of the drawer to close it. Press gently until it locks into place.

# Audio/Video controls

This section describes how to use the audio/video control buttons.

## Next and Previous buttons

Press on the button to select the desired function.

**Next** Press the ⏭ button to advance to the next track, chapter or data.

**Previous** Press the ⏮ button to advance to the previous track, chapter or data.

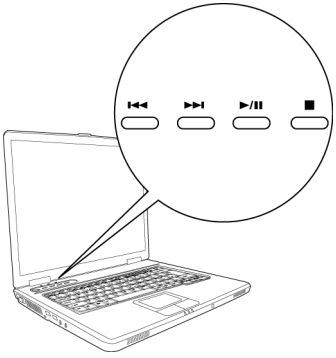
*If Random is selected in Windows® Media Player, selecting Next or Previous advances to a random selection.*

## Play/Pause and Stop buttons

Press on the button to select the desired function.

**Play/Pause** Press the ⏯ button to begin or pause play.

**Stop** Press the ⏹ button to stop play.



*Audio/Video Control buttons*

# Writing CDs with the DVD-ROM and CD-R/RW drive

Depending on the type of drive installed, you may be able to write CDs. The DVD-ROM and CD-R/RW drive lets you read DVD-ROMs and CDs as well as write CD-R/RW. Observe the precautions in this section to ensure the best performance for writing CDs. For information on loading and unloading CDs refer to the Using optical media drive section.

*CD-R discs can be written to only once. CD-RW discs can be rewritten many times.*

## Important message (DVD-ROM and CD-R/RW drive)

Before you write or rewrite to DVD-ROM and CD-R/RW disc, read and follow all setup and operating instructions in this section.

If you fail to do so, the DVD-ROM and CD-R/RW drive may not function properly, and you may fail to write or rewrite,lose data or incur other damage.

## Before writing or rewriting

Please observe the following points when you write or rewrite the data.

- We recommend the following manufacturers of CD-R and CD-RW media. Media quality can affect write or rewrite success rates.

| | |
|---|---|
| CD-R: | TAIYO YUDEN Co., Ltd.<br>MITSUI Chemicals, Inc.<br>MITSUBISHI Chemical Corporation<br>Ricoh Co., Ltd.<br>Hitachi Maxell Ltd. |
| CD-RW: | MITSUBISHI Chemical Corporation<br>Ricoh Co., Ltd. |

*For the special media listed below, the following manufacturers are recommended:

- High-Speed CD-RW:
  MITSUBISHI Chemical Corporation, Ricoh Co., Ltd.
- Ultra-Speed CD-RW:
  MITSUBISHI Chemical Corporation

TOSHIBA has confirmed the operation of CD-R and CD-RW media of the manufacturers above. Operation of other media cannot be guaranteed.

- CD-RW can generally be rewritten about 1,000 times. However, the actual number of rewrites is affected by the quality of the media and the way it is used.
- Be sure to connect the AC adaptor when you write or rewrite.
- Be sure to close all other software programs except the writing software.
- Do not run software such as a screen saver which can put a heavy load on the CPU.
- Operate the computer under the power scheme **Always ON**. Do not use power-saving features.
- Do not write while virus check software is running. Wait for it to finish, then disable virus detection programs including any software that checks files automatically in the background.
- Do not use hard disk utilities, including those intended to enhance HDD access speed. They may cause unstable operation and damage data.
- Write from the computer's HDD to the CD. Do not try to write from shared devices such as a LAN server or any other network device.
- Writing with software other than RecordNow! has not been confirmed. Therefore, operation with other software cannot be guaranteed.

## When writing or rewriting

Note the following when you write or rewrite a CD-R or CD-RW.

- Always copy data from the hard disk drive to the CD. Do not use cut-and-paste. The original data will be lost if there is a write error.
- Do not perform any of the following actions:
  - Change users in the Windows® XP operating system.
  - Operate the computer for any other function, including use of a mouse or TouchPad, closing/opening the LCD panel.
  - Start a communication application such as a modem.
  - Apply impact or vibration to the PC.
  - Install, remove or connect external devices, including the following: PC Card, USB devices, external display, optical digital devices.
  - Open the optical media drive.
- If the media is poor in quality, dirty or damaged, writing or rewriting errors may occur.
- Set the computer on a level surface and avoid places subject to vibration such as airplanes trains, or cars. Do not use an unstable surface such as a stand.
- Keep mobile phones and other wireless communication devices away from the computer.

### Disclaimer (DVD-ROM and CD-R/RW drive)

TOSHIBA does not bear responsibility for the following:

- Damage to any CD-R/RW disc that may be caused by writing or rewriting with this product.
- Any change or loss of the recorded contents of CD-R/RW disc that may be caused by writing or rewriting with this product, or for any business profit loss or business interruption that may be caused by the change or loss of the recorded contents.
- Damage that may be caused by using third party equipment or software.Given the technological limitations of current optical disc writing drives, you may experience unexpected writing or rewriting errors due to disc quality or problems with hardware devices. Also, it is a good idea to make two or more copies of important data, in case of undesired change or loss of the recorded contents.

## Writing CD/DVDs with the DVD Super Multi drive

*Some models in this series are equipped with Writing CD/DVDs with the DVD Super Multi drive (Supporting Double Layer).*

You can use the DVD Super Multi drive to write data to either CD-R/RW or DVD-R/-RW/+R/+RW/-RAM discs. The following applications for writing are preinstalled: RecordNow!, and DLA licensed by Sonic Solutions. InterVideo WinDVD Creator 2 Platinum, which is a product of InterVideo, Inc.

### Important message (DVD Super Multi drive)

Before you write or rewrite to CD-R/RW or DVD-R/-RW/+R/+RW/-RAM discs, read and follow all setup and operating instructions in this section. If you fail to do so, the DVD Super Multi drive may not function properly, and you may fail to write or rewrite, lose data or incur other damage.

### Disclaimer (DVD Super Multi drive)

TOSHIBA does not bear responsibility for the following:

- Damage to any CD-R/RW or DVD-R/-RW/+R/+RW/-RAM disc that may be caused by writing or rewriting with this product.
- Any change or loss of the recorded contents of CD-R/RW or DVD-R/-RW/+R/+RW/-RAM disc that may be caused by writing or rewriting with this product, or for any business profit loss or business interruption that may be caused by the change or loss of the recorded contents.
- Damage that may be caused by using third party equipment or software. Given the technological limitations of current optical disc writing drives, you may experience unexpected writing or rewriting errors due to disc quality or problems with hardware devices. Also, it is a good idea to make two or more copies of important data, in case of undesired change or loss of the recorded contents.

## Before writing or rewriting

- Based on TOSHIBA's limited compatibility testing, we suggest the following manufacturers of CD-R/RW and DVD-R/+R/-RW/+RW/-RAM disc. However, in no event does TOSHIBA guarantee the operation, quality or performance of any disc. Disc quality can affect write or rewrite success rates.

| | |
|---|---|
| CD-R: | TAIYO YUDEN Co., Ltd.<br>MITSUBISHI Chemical Corporation<br>Ricoh Co., Ltd.<br>Hitachi Maxell Ltd. |
| CD-RW: | MITSUBISHI Chemical Corporation<br>Ricoh Co., Ltd. |
| High Speed CD-RW: | MITSUBISHI Chemical Corporation<br>Ricoh Co., Ltd. |
| Ultra Speed CD-RW: | MITSUBISHI Chemical Corporation |
| DVD-R: | **DVD Specifications for Recordable disc for General Version2.0**<br>TAIYO YUDEN Co., Ltd.<br>Matsushita Electric Industrial Co., Ltd. |
| DVD+R: | MITSUBISHI Chemical Corporation<br>Ricoh Co., Ltd. |
| DVD-RW: | **DVD Specifications for Recordable Disc for Version 1.1 or 1.2**<br>Victor Company of Japan, Ltd. (JVC)<br>MITSUBISHI Chemical Corporation |
| DVD+R (DL): | MITSUBISHI Chemical Corporation<br>(Supporting Double Layer model only) |
| DVD+RW: | MITSUBISHI Chemical Corporation |
| DVD-RAM: | DVD Specifications for DVD-RAM Disc for Version2.0 or 2.1<br>Hitachi Maxell Ltd.<br>Matsushita Electric Industrial Co., Ltd. |

*This drive cannot use discs that allow writing of 8 speeds or more (DVD-R, DVD+R ), or 4 speeds or more (DVD-RW, DVD+RW)*

- If the disc is poor in quality, dirty or damaged, writing or rewriting errors may occur. Be careful to check the disc for dirt or damage before you use it.
- The actual number of rewrites to CD-RW, DVD-RW, DVD+RW or DVD-RAM is affected by the quality of the disc and the way it is used.

- There are two types of DVD-R discs: authoring and general use discs. Do not use authoring discs. Only general use discs can be written to by a computer drive.
- You can use DVD-RAM discs that can be removed from a cartridge and DVD-RAM discs designed without a cartridge.You can use a disc with a 2.6GB single-sided capacity by read only mode.
- Other DVD-ROM drives for computers or other DVD players may not be able to read DVD-R/-RW or DVD+R/+RW discs.
- Data written to a CD-R/DVD-R/DVD+R disc cannot be deleted either in whole or in part.
- Data deleted (erased) from a CD-RW, DVD-RW, DVD+RW and DVD-RAM disc cannot be recovered. Check the content of the disc carefully before you delete it. If multiple drives that can write data to discs are connected, be careful not to delete data from the wrong drive.
- In writing to a DVD-R/-RW, DVD+R/+RW or DVD-RAM disc, some disc space is required for file management, so you may not be able to write the full capacity of the disc.
- Since the disc is based on the DVD standard, it might be filled with dummy data if the written data is less than about 1 GB. Even if you write only a small amount of data, it might take time to fill in the dummy data.
- DVD-RAM formatted by FAT32 cannot be read in Windows® 2000 without DVD-RAM Driver Software.
- When multiple drives that can write data to discs are connected, be careful not to write to the wrong drive.
- Be sure to connect the AC adaptor before you write or rewrite.
- Before you enter Standby/Hibernation Mode, be sure to finish DVD-RAM writing. Writing is finished if you can eject DVD-RAM media.
- Be sure to close all other software programs except the writing software.
- Do not run software such as a screen saver, which can put a heavy load on the CPU.
- Operate the computer under the power scheme **Always ON**. Do not use power-saving features.
- Do not write while virus check software is running. Wait for it to finish and then disable virus detection programs including any software that checks files automatically in the background.
- Do not use hard disk utilities, including those intended to enhance HDD access speed. They may cause unstable operation and data damage.
- Write from the computer's hard disk drive to the CD/DVD. Do not try to write from shared devices such as a LAN server or any other network device.
- Writing with software other than RecordNow! is not recommended.

## When writing or rewriting

Please observe/consider the following when you write or rewrite to a CD-R/-RW, DVD-R/-RW/-RAM or DVD+R/+RW disc.

- Do not perform any of the following actions when writing or rewriting:
  - Change users in the Windows® XP operating system.
  - Operate the computer for any other function, including using a mouse or TouchPad or closing/opening the LCD panel.
  - Start a communication application such as a modem.
  - Apply impact or vibration to the computer.
  - Install, remove or connect external devices, including the following: PC Card, USB devices, external display, optical digital devices.
  - Use the audio/video control buttons to reproduce music or voice.
  - Open the DVD Super Multi drive.
- Do not use shut down/log off and Standby/Hibernation Mode while writing or rewriting.
- Make sure writing or rewriting is completed before going into Standby/Hibernation Mode. Writing is completed if you can open the DVD Super Multi drive tray.
- Set the computer on a level surface and avoid places subject to vibration such as airplanes, trains, or cars. Do not use an unstable surface such as a stand.
- Keep mobile phones and other wireless communication devices away from the computer.
- Always copy data from the hard disk drive to the CD-R/-RW,DVD-R/-RW/-RAM or DVD+R/+RW disc. Do not use cut-and-paste. The original data will be lost if there is a write error.

## RecordNow! Basic for TOSHIBA

Note the following limitations when you use RecordNow!:

- DVD-Video cannot be created using RecordNow!.
- DVD-Audio cannot be created using RecordNow!.
- You cannot use RecordNow!'s "Audio CD for Car or Home CD Player" function to record music to the DVD-R/-RW or DVD+R/+RW disc.
- Do not use the "Exact Copy" function of RecordNow! to copy DVDVideo and DVD-ROM with copyright protection.
- DVD-RAM disc cannot be backed up with the "Exact Copy" function of RecordNow!.
- You cannot back up a CD-ROM or CD-R/RW to DVD-R/-RW or DVD+R/+RW using the "Exact Copy" function of RecordNow!.
- You cannot back up DVD-ROM, DVD-Video or DVD-R/-RW or DVD+R/+RW to CD-R/RW using the "Exact Copy" function of RecordNow!.
- RecordNow! cannot record in packet format.
- You might not be able to use the "Exact Copy" function of RecordNow! to back up a DVD-R/-RW or DVD+R/+RW disc that was made with other software on a different DVD-R/-RW or DVD+R/+RW recorder.
- If you add data to a DVD-R and DVD+R disc that you have already recorded to, you might not be able to read the added data under some circumstances. It cannot be read in 16-bit operating systems, such as Windows® 98SE and Windows® ME. In Windows® NT4, you will need Service Pack 6 or later to read added data. In Windows® 2000, you will need Service Pack 2 or later to read it. Some DVD-ROM and DVD-ROM & CD-R/RW drives cannot read added data regardless of the operating system.
- RecordNow! does not support recording to DVD-RAM discs. To record to a DVD-RAM, use Explorer or other utility.
- When you back up a DVD disc, be sure the source drive supports recording to DVD-R/-RW or DVD+R/+RW discs. If the source drive does not support recording to DVD-R/-RW or DVD+R/+RW discs, it might not be backed up correctly.
- When you back up a DVD-R, DVD-RW, DVD+R or DVD+RW, be sure to use the same type of disc.
- You cannot partially delete any data written to a CD-RW, DVD-RW or DVD+RW disc.
- Data written to a CD-R/DVD-R/DVD+R disc cannot be deleted either in whole or in part.

### *Data Verification*

To verify that data is written or rewritten correctly, follow the steps below before you write or rewrite a data CD/DVD.

1. Click the Options button ( ) on the RecordNow! Console to open the Options panels.
2. Select the Data in the left-side menu.
3. Mark the Verify data written to the disc after burning check box in the Data Options.
4. Click the OK button.

## DLA for TOSHIBA

Note the following limitations when you use DLA:

- This software supports only rewritable discs (DVD+RW, DVD-RW, and CD-RW). It does not support DVD+R, DVD-R, and CD-R discs that are not rewritable.
- DLA does not support formatting the DVD-RAM disc and writing to it. They are performed by DVD-RAM Driver Software. The proper software works according to the disc inserted in the drive.
- Do not use any discs that have been formatted with packet writing software other than DLA. Similarly, do not use any discs that have been formatted with DLA with any packet writing software other than DLA. When using a disc you are not familiar with, format it by selecting "Full Format" before using it.
- Do not use the Cut & Paste function for files and folders. A file or folder that has been cut may be lost if writing fails due to an error on the disc.

## InterVideo WinDVD Creator Platinum

Please refer to the on-line Help for additional InterVideo WinDVD Creator information.

When writing the Setup files for the program into a disc formatted by DLA and starting Setup from this disc, an error may occur. In this case, plase copy them to your hard disk and then run Setup.

Note the following limitations when you write video DVD:

1. Editing digital video
   - Log in with Administrator rights to use WinDVD Creator.
   - Make sure that your computer is running on AC power when using WinDVD Creator.
   - Operate the computer under the power scheme **Always ON**. Do not use power-saving features.
   - While you are editing DVD, you can display previews. However, if another application is running, the preview might not display properly.
   - WinDVD Creator cannot show video on the external monitor when in simultaneous mode.
   - WinDVD Creator cannot edit or play copy protected content.
   - Do not change display settings while using WinDVD Creator.
   - Do not enter standby/hibernation mode while using WinDVD Creator.
   - Do not operate WinDVD Creator immediately after turning on the computer. Please wait until all Disc Drive activity has stopped.
   - When recording to a DV-Camcorder, to ensure you capture all of your data, let the camcorder record for a few seconds before you begin recording your actual data.
   - CD recorder, JPEG functions, DVD-Audio, mini DVD and Video CD functions are not supported in this version.
   - While recording video to DVD or tape, please close all other programs.
   - Do not run software like a screen saver because it can put a heavy load on the CPU.
   - Do not run communication applications like a modem or a LAN.

2. Before recording the video to DVD
   - When you record to DVD disc, please use only discs recommended by the Drive manufacturer.
   - Do not set the working drive to a slow device like a USB 1.1 hard disk drive or it will fail to write DVD.
   - Do not perform any of the following actions:
     - Operate the computer for any other function, including using a mouse or TouchPad or closing/opening the LCD panel.
     - Bump or cause vibration to the computer.
     - Use the Mode control button and Audio/Video control button to reproduce music or voice.
     - Open the DVD drive.
     - Install, remove or connect external devices, including the following:

       PC card, SD card, USB devices, external display, i.LINK. devices, optical digital devices.
   - Please verify your disc after recording important data.
   - DVD-R/+R/-RW disc cannot be written in VR format.
   - A maximum of about 2 hours of video data can be written in DVD Video format to DVD-R/+R/-RW/+RW disc.
   - WinDVD Creator cannot export to DVD-Audio, VideoCD, miniDVD format.
   - WinDVD Creator can write DVD-RAM/+RW in VR format, but the disc may only play on your computer.
   - When writing to DVD disc, WinDVD Creator requires 2GB or more over disk space every one hour of video.
   - When you make a fully recorded DVD, the chapter sequence may not play correctly.
3. About Disc Manager
   - WinDVD Creator can edit one play list on a disc.
   - WinDVD Creator might show a different a thumbnail than you previously set in CE (Consumer Electronics) DVD-RAM recorder.
   - Using the Disc Manager, you can edit DVD-VR format on DVDRAM, DVD+VR format on DVD+RW, and DVD-Video format on DVD-RW.
4. About recorded DVDs
   - Some DVD-ROM drives for personal computers or other DVD players may not be able to read DVD-R/+R/-RW/+RW/-RAM discs.
   - When playing your recorded disc on your computer, please use the WinDVD software application.
   - If you use an over-used rewritable disc, the full formatting might be locked. Please use a brand new disc.

# Media care

This section provides tips on protecting data stored on your CD/DVDs and floppy disks.

Handle your media with care. The following simple precautions will increase the lifetime of your media and protect the data stored on them:

## CD/DVDs

1. Store your CD/DVDs in the container they came in to protect them and keep them clean.
2. Do not bend the CD/DVD.
3. Do not write on, apply a sticker to, or otherwise mar the surface of the CD/DVD that contains data.
4. Hold the CD/DVD by its outside edge or the edge on the center hole. Fingerprints on the surface can prevent the drive from properly reading data.
5. Do not expose to direct sunlight, extreme heat or cold. Do not place heavy objects on your CD/DVDs.
6. If your CD/DVDs become dusty or dirty, wipe them with a clean dry cloth. Wipe from the center out, do not wipe in a circular direction around the CD/DVD. If necessary, use a cloth dampened in water or a neutral cleaner. Do not use benzine, thinner or similar cleaner.

## Floppy disks

1. Store your floppy disks in the container they came in to protect them and keep them clean. If a floppy disk is dirty, do not use cleaning fluid. Clean it with a soft damp cloth.
2. Do not slide back the floppy disk's protective metal covering or touch the floppy disk's magnetic surface. Fingerprints may prevent the floppy disk drive from reading data from the floppy disk.
3. Data may be lost if the floppy disk is twisted; bent; or exposed to direct sunlight, extreme heat or cold.
4. Do not place heavy objects on your floppy disks.
5. Do not eat, smoke, or use erasers near your floppy disks. Foreign particles inside the floppy disk's jacket can damage the magnetic surface.
6. Magnetic energy can destroy the data on your floppy disks. Keep your floppy disks away from speakers, radios, television sets and other sources of magnetic fields.

# Sound System

This section describes audio controls including sound levels and power management.

## Volume control

The Volume Control utility lets you control the audio volume in Windows® for both playback and recording.

- To launch Volume Control for playback, click **start**, point to **All Programs**, point to **Accessories**, point to **Entertainment** and click **Volume Control**.
- To launch Recording Control, click **Options**, point to **Properties**, choose **Recording** and click **OK**.
- To view details of the Volume Control, click **Help** on the Volume Control.

## Microphone level

To change the microphone gain, follow the steps below.

1. Click **start**, point to **All Programs**, point to **Accessories**, point to **Entertainment** and click **Volume Control**.
2. Click **Options** and point to **Properties**.
3. Select **Recording** and click **OK**.
4. Click **Options** and select **Advanced Controls**.
5. Click **Advanced**.
6. Check the **Microphone Boost** checkbox.

# Modem

This section describes how to connect and disconnect the internal modem to and from a telephone jack.

*The internal modem does not support voice functions. All data and fax functions are supported.*

- *In case of a lightning storm, unplug the modem cable from the telephone jack.*
- *Do not connect the modem to a digital telephone line. A digital line will damage the modem.*

## Region selection

Telecommunication regulations vary from one region to another, so you will need to make sure the internal modem's settings are correct for the region in which it will be used.

To select a region, follow the steps below.

1. Click **start**, point to **All Programs**, **TOSHIBA**, **Networking**, and click **Modem Region Select**.

*Do not use the Country/Region Select function in the Modem setup utility in the Control Panel if the function is available. If you change the Country/Region in the Control Panel, the change may not take effect.*

2. The Region Selection icon will appear in the Task Bar. Click the icon with the primary mouse button to display a list of regions that the modem supports. A sub menu for telephony location information will also be displayed. A check will appear next to the currently selected region and telephony location.
3. Select a region from the region menu or a telephony location from the sub-menu.
   - When you click a region it becomes the modem's region selection, and the New Location for telephony will be set automatically.
   - When you select a telephony location, the corresponding region is automatically selected and it becomes the modem's current region setting.

## Properties menu

Click the icon with the secondary mouse button to display properties menu on the screen.

## Settings

You can enable or disable the following settings:

### *AutoRun Mode*

The Region Select utility starts automatically when you start up the operating system.

### *Open the Dialing Properties dialog box after selecting region.*

The dialing properties dialog box will be displayed automatically after you select the region.

### *Location list for region selection.*

A submenu appears displaying location information for telephony.

### *Open dialog box, if the modem and Telephony Current Location region code do not match.*

A warning dialog box is displayed if current settings for region code and telephony location are incorrect.

## Modem Selection

If the computer cannot recognize the internal modem, a dialog box is displayed. Select the COM port for your modem to use.

## Dialing Properties

Select this item to display the dialing properties.

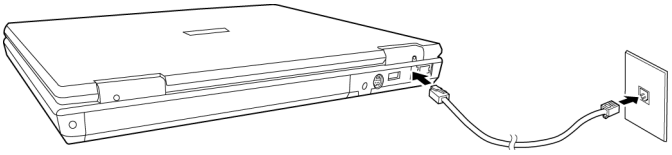
*If you are using the computer in Japan, the Telecommunications Business Law requires that you select Japan region mode. It is illegal to use the modem in Japan with any other selection.*

## Connecting

To connect the modem cable, follow the steps below.

- *The modular cable that comes with the computer must be used to connect a modem. Connect the end of the modular cable with the core to the computer.*
- *In case of a lightning storm, unplug the modem cable from the telephone jack.*
- *Do not connect the modem to a digital telephone line. A digital line will damage the modem.*

1. Plug one end of the modular cable into the modem jack.
2. Plug the other end of the modular cable into a telephone jack.



*Connecting the internal modem*

*Do not pull on the cable or move the computer while the cable is connected.*

*If you use a storage device such as an optical drive or hard disk drive connected to a 16-bit PC Card, you might experience the following modem problems:*

- *Modem speed is slow or communication is interrupted.*
- *Skips may occur in sound.*

### Disconnecting

To disconnect the internal modem cable, follow the steps below.

1. Pinch the lever on the connector in the telephone jack and pull out the connector.
2. In the same way, pull the cable's other connector out of the computer.

## Wireless LAN

The Wireless LAN feature is not available on all models. Where present, it supports the B and G standard but it is compatible with other LAN systems based on Direct Sequence Spread Spectrum/Orthogonal Frequency Division Multiplexing radio technology that complies with IEEE802.11 Wireless LAN standard.

- Automatic Transmit Rate Select mechanism in the transmit range of 54, 48, 36, 24, 18, 12, 9 and 6 Mbit/s. (IEEE 802.11g)
- Automatic Transmit Rate Select mechanism in the transmit range of 11, 5.5, 2 and 1 Mbit/s. (IEEE 802.11b)
- Roaming over multiple channels
- Card Power Management
- Wired Equivalent Privacy (WEP) data encryption, based on the 128 bit encryption algorithm.
- Advanced Encryption Standard (AES) data encryption, based on 128 bit encryption algorithm.

*Wake-up on LAN does not function on a Wireless LAN.*

### Security

- Be sure to enable the encryption function otherwise you may expose your computer to illegal access by an outsider across the Wireless LAN which may cause intrusion, eavesdropping, and the loss or destruction of stored data. TOSHIBA strongly recommend the customer to enable the encryption function.
- TOSHIBA is not liable for the eavesdropping of data due to the use of Wireless LAN and the damage thereof.

### Wireless communication switch

You can enable or disable the Wireless LAN function, with the on/off switch. No transmissions are sent or received when the switch is off. Slide the switch to the right to turn it on and to the left to turn it off.

*Set the switch to off in airplanes and hospitals. Check the indicator. It will stop glowing when the wireless communication function is off.*

### Wireless communication indicator

The wireless communication indicator indicates the status of the wireless communication functions.

| Indicator status | Indication |
|---|---|
| Indicator off | Wireless communication switch is set to off.<br>Automatic power down because of overheating.<br>Power malfunction |
| Indicator glows | Wireless communication switch is on. Wireless LAN is turned on by an application. |

If you used the Task Bar to disable Wireless LAN, you will need to restart the computer to re-enable it. Alternatively, you can also follow this procedure:

1. In the **Control Panel**, click **Performance and Maintenance**, then **System**.
2. Select the **Hardware** tab.
3. Click the **Device Manager**. The Device Manager window opens. Click **Network Adapters**.
4. Select your preferred Network Adapter, then click the Enable button in the task bar.

## LAN

The computer has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T), Fast Ethernet LAN (100 megabits per second, 100BASE-TX). This section describes how to connect/disconnect to a LAN.

### LAN cable types

*The computer must be configured properly before connecting to a LAN. Logging onto a LAN using the computer's default settings could cause a malfunction in LAN operation. Check with your LAN administrator regarding set-up procedures.*

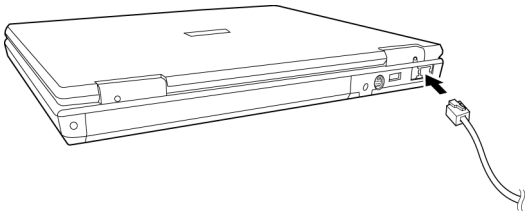
If you are using Fast Ethernet LAN (100 megabits per second, 100BASE-TX), be sure to connect with a CAT5 cable or higher. You cannot use a CAT3 cable.

If you are using Ethernet LAN (10 megabits per second, 10BASE-T), you can connect with a CAT3 or higher.

## Connecting LAN cable

To connect the LAN cable, follow the steps below.

1. Turn off the power to the computer and to all external devices connected to the computer.
2. Plug one end of the cable into the LAN jack. Press gently until you hear the latch click into place.



*Connecting the LAN cable*

3. Plug the other end of the cable into a LAN hub connector. Check with your LAN administrator before connecting to a hub.

## Disconnecting LAN cable

To disconnect the LAN cable, follow the steps below.

1. Pinch the lever on the connector in the computer's LAN jack and pull out the connector.
2. Disconnect the cable from the LAN hub in the same manner. Check with your LAN administrator before disconnecting from the hub.

# Cleaning the computer

To help ensure long, trouble-free operation, keep the computer free of dust and use care with liquids around the computer.

- Be careful not to spill liquids into the computer. If the computer does get wet, turn the power off immediately and let the computer dry completely before you turn it on again.
- Clean the computer using a slightly damp (with water) cloth. You can use glass cleaner on the display. Spray a small amount of cleaner on a soft, clean cloth and wipe the screen gently with the cloth.

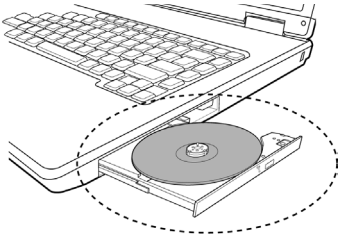
*Never spray cleaner directly onto the computer or let liquid run into any part of it. Never use harsh or caustic chemical products to clean the computer.*

- Remove the dust from the cooling vents on the Left side of the computer regularly with a vacuum cleaner. Refer to Chapter 2, *The Grand Tour*, *Left side*.

# Moving the computer

The computer is designed for rugged durability. However, a few simple precautions taken when moving the computer will help ensure trouble-free operation.

- Make sure all disk activity has ended before moving the computer. Check the Disk indicator on the computer.
- If a CD/DVD is in the drive, remove it. Also make sure the drawer is securely closed.
- Turn off the power to the computer.
- Disconnect the AC adaptor and all peripherals before moving the computer.
- Close the display. Do not pick up the computer by its display panel.
- Use the carrying case when transporting the computer.
- When carrying your computer, be sure to hold it securely so that it does not fall or hit anything.
- Do not carry your computer by holding protruded portions.



*Protruded portion*

# Chapter 5

# The Keyboard

The computer's keyboard layouts are compatible with a 101/102-key enhanced keyboard. By pressing some keys in combination, all the 101/102-key keyboard functions can be executed on the computer.

The number of keys on your keyboard depends on which country/region's keyboard layout your computer is configured with. Keyboards for numerous languages are available.

There are six types of keys: typewriter keys, keypad overlay, function keys, soft keys, Windows® special keys, and cursor control keys.

## Typewriter keys

The typewriter keys produce the upper- and lower-case letters, numbers, punctuation marks, and special symbols that appear on the screen.

There are some differences, however, between using a typewriter and using a computer keyboard:

- Letters and numbers produced in computer text vary in width. Spaces, which are created by a "space character," may also vary depending on line justification and other factors.
- The lowercase l (el) and the number 1 (one) are not interchangeable on computers as they are on a typewriter.
- The uppercase O (oh) and the 0 (zero) are not interchangeable.
- The **Caps Lock** function key locks only the alphabetic characters in uppercase while the shift lock on a typewriter places all keys in the shifted position.
- The **Shift** keys, the **Tab** key, and the **BkSp** (backspace) key perform the same function as their typewriter counterparts but also have special computer functions.

# F1 ... F12 function keys

The function keys (not to be confused with **Fn**) are the 12 keys at the top of your keyboard. These keys function differently from other keys.

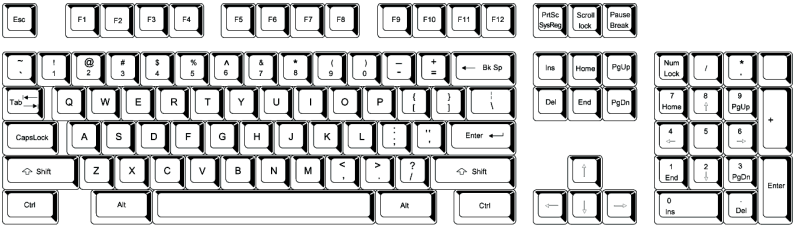
**F1** through **F12** are called function keys because they execute programmed functions when pressed. Used in combination with the **Fn** key, keys marked with icons execute specific functions on the computer. Refer to the section, *Soft keys: Fn key combinations*, in this chapter. The function executed by individual keys depends on the software you are using.

# Soft keys: Fn key combinations

The Fn (function) is used in combination with other keys to form soft keys. Soft keys are key combinations that enable, disable or configure specific features.

*Some software may disable or interfere with soft-key operations. Soft-key settings are not restored by the Standby Mode feature.*

## Emulating keys on enhanced keyboard



*A 101-key enhanced keyboard layout*

The keyboard is designed to provide all the features of the 101-key enhanced keyboard, shown in figure above. The 101/102-key enhanced keyboard has a numeric keypad and scroll lock key. It also has additional **Enter** and **Ctrl** keys to the right of the main keyboard. Since the keyboard is smaller and has fewer keys, some of the enhanced keyboard functions must be simulated using two keys instead of one on the larger keyboard.

Your software may require you to use keys that the keyboard does not have. Pressing the **Fn** key and one of the following keys simulates the enhanced keyboard's functions.

# Hot keys

Hot keys let you enable or disable certain features of the computers.

**Sound mute:** Pressing **Fn + Esc** in a Windows® environment turns sound on or off. When you press these hot keys, the current setting will change and be displayed as an icon.

**Instant security:** Press **Fn + F1** to blank the screen to prevent others from accessing your data. To restore the screen and original settings, press any key or press the TouchPad. If a screensaver password is registered, a dialog box will appear. Enter the screensaver password and click **OK**. If no password is set, the screen will be restored when you press any key or press the TouchPad.

**Power save mode:** Pressing **Fn + F2** opens Power Option Properties. You can check the power status or configure power saving settings.

**Standby:** When you press **Fn + F3**, the computer enters Standby Mode. To avoid entering Standby Mode unexpectedly, a dialog box appears for verification. However, if you select the check box, it will not appear in the future.

**Hibernation:** When you press **Fn + F4**, the computer enters Hibernation Mode. To avoid entering Hibernation Mode unexpectedly, a dialog box appears for verification. However, if you select the check box, it will not appear in the future.

**Display selection:** Press **Fn + F5** to change the active display device. When you press these hot keys, a dialog box appears. Only selectable devices will be displayed. Hold down **Fn** and press **F5** again to change the device. When you release **Fn** and **F5**, the selected device will change.

**LCD Display Brightness:** Pressing **Fn + F6** decreases the display brightness in decrements. When you press these hot keys, the current setting will be displayed for two seconds by an icon.

**LCD Display Brightness:** Pressing **Fn + F7** increases the display brightness in increments. When you press these hot keys, the current setting will be displayed for two seconds by a pop-up icon.

*Display clarity increases with the brightness level.*

**Wireless setting:** There is no programmed function assigned to **Fn + F8** on this model.

**TouchPad:** Pressing **Fn + F9** in a Windows® environment enables or disables the TouchPad function. When you press these hot keys, the current setting will change and be displayed as an icon.

Press **Fn + F11** to access the integrated keypad. When activated, the keys with gray markings on the bottom edge become numeric keypad keys. Refer to the *Keypad overlay* section in this chapter for more information on how to operate these keys. The power on default for both settings is off.

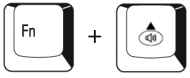
Press **Fn + F12** (**ScrLock**) to lock the cursor on a specific line. The power on default is off.

**Display resolution selection:** Press **Fn + spacebar** to change the display resolution. Each time when you press these hot keys, the display resolution changes.

**TOSHIBA Zooming Utility (reduce):** To reduce the icon size on the desktop or the application window, press the **1** key while holding down the **Fn** key.

**TOSHIBA Zooming Utility (enlarge):** To enlarge the icon size on the desktop or the application window, press the **2** key while holding down the **Fn** key.

**Volume decrease:** Press **Fn + Down** to decrease the sound volume. After you press this hot key,an icon showing the new setting will be displayed for two seconds.




**Volume increase:** Press **Fn + Up** to increase the sound volume. After you press this hot key,an icon showing the new setting will be displayed for two seconds.

## Fn Sticky key

You can use the TOSHIBA Accessibility Utility to make the **Fn** key sticky, that is, you can press it once, release it, and then press an " **F number**" key. To start the TOSHIBA Accessibility Utility, click **start**, point to **All Programs**, point to **TOSHIBA**, point to **Utilities** and click **Accessibility**.

# Windows® special keys

The keyboard provides two keys that have special functions in Windows® : Windows® logo key activates the **start** menu and the other, the application key, has the same function as the secondary mouse button.

This key activates the Windows® **start** menu.

This key has the same function as the secondary mouse button.

# Keypad overlay

Your computer's keyboard does not have an independent numeric keypad, but its numeric keypad overlay functions like one.

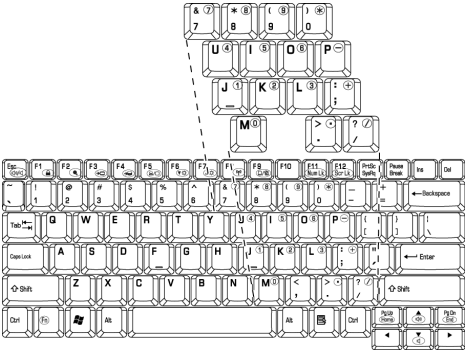
The keys in the center of the keyboard with gray letters make up the numeric keypad overlay. The overlay provides the same functions as the numeric keypad on the 101/102-key enhanced keyboard described previously.

## Turning on the overlays

The numeric keypad overlay can be used for numeric data input or cursor and page control.

### *Numeric mode*

To turn on the Numeric mode, press **Fn + F11**. The Numeric mode indicator lights. Now try numeric data entry using the keys in the following figure. Press **Fn + F11** again to turn off the overlay.



*The numeric keypad overlay*

### Temporarily using normal keyboard (overlay on)

While using the overlay, you can temporarily access the normal keyboard without turning off the overlay:

1. Hold **Fn** and press any other key. All keys will operate as if the overlay were off.
2. Type upper-case characters by holding **Fn + Shift** and pressing a character key.
3. Release **Fn** to continue using the overlay.

## Generating ASCII characters

Not all ASCII characters can be generated using normal keyboard operation. But, you can generate these characters using their ASCII codes.

With the overlay on:

1. Hold down **Alt**.
2. Using the overlay keys, type the ASCII code.
3. Release **Alt**, and the ASCII character appears on the display screen.

With the overlay off:

1. Hold down **Alt + Fn**.
2. Using the overlay keys, type the ASCII code.
3. Release **Alt + Fn**, and the ASCII character appears on the display screen.

# Chapter 6

# Power and Power-Up Modes

The computer's power resources include the AC adaptor and internal batteries. This chapter gives details on making the most effective use of these resources including charging and changing batteries, tips for saving battery power, and power up modes.

## Power conditions

The computer's operating capability and battery charge status are affected by the power conditions: whether an AC adaptor is connected, whether a battery is installed and what the charge level is for the battery.

**Table Power conditions**

| | | Power on | Power off (no operation) |
|---|---|---|---|
| **Universal AC adaptor connected** | Battery fully charged | • Operates<br>• LED: **Battery** green | • LED: **Battery** green |
| | Battery partially charged or no charge | • Operates<br>• Quick Charge<br>• LED: **Battery** orange | • Quick charge<br>• LED: **Battery** orange |
| | No battery installed | • Operates<br>• No charge<br>• LED: **Battery** off | • No charge<br>• LED: **Battery** off |
| **Universal AC adaptor not connected** | Battery charge is above low battery trigger point | • Operates<br>• LED: **Battery** off | |
| | Battery charge is below low battery trigger point | • Operates<br>• LED: **Battery** flashes orange | |
| | Battery charge is exhausted | Computer shuts down | |
| | No Battery installed | • Cannot operates<br>• LED: **Battery** off | |

Check the **Battery** indicator to determine the status of the battery pack. The following indicator lights indicate the battery status:

| | |
|---|---|
| **Flashing orange** | The battery charge is low. The AC adaptor must be connected to recharge the battery. |
| **Orange** | Indicates the AC adaptor is connected and charging the battery. |
| **Green** | Indicates the AC adaptor is connected and the battery is fully charged. |
| **No light** | Under any other conditions, the indicator does not light. |

*If the battery becomes too hot while it is being charged, the charge will stop and the battery indicator will go out. When the battery's temperature falls to a normal range, charge will resume. This occurs whether the computer's power is on or off.*

## Power indicator

Check the **Power** indicator to determine the power status:

| | |
|---|---|
| **Green** | Indicates power is being supplied to the computer and the computer is turned on. |
| **Blinking orange** | Indicates power is being supplied to the computer while the computer is in Standby Mode. The indicator turns on for one second and off for two seconds. |
| **No light** | Under any other conditions, the indicator does not light. |

# Battery types

The computer has the following batteries:

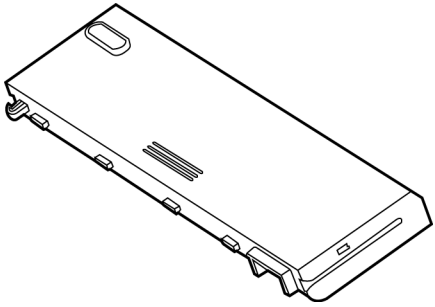
- Battery pack (4300mAh)
- Real Time Clock (RTC) battery

- *The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.*
- *Do not remove the battery pack while the computer is in Standby Mode. Data is stored in RAM, so if the computer loses power it will be lost.When the computer is powered off in Standby Mode, and the AC adaptor is not connected, the main battery pack supplies power to maintain data and programs in memory. If the battery pack is completely discharged, Standby Mode does not function and the computer loses all data in memory.*

## Battery pack

When the AC adaptor is not connected, the computer's main power source is a removable lithium ion battery pack, also referred to in this manual as the main battery. You can purchase additional battery packs for extended use of the computer away from an AC power source.

Before you remove the battery pack, set the computer to Hibernation Mode or save your data and shut down the computer. Do not change the battery pack while the AC adaptor is connected.



*Battery pack*

To ensure that the battery pack maintains its maximum capacity, operate the computer on battery power at least once a month until the battery pack is fully discharged. Refer to *Extending battery life* in this chapter for procedures. If the computer is continuously operated on AC power through an AC adaptor for an extended period, more than a month, the battery may fail to retain a charge. It may not function efficiently over the expected life of the battery and the **Battery** indicator may not indicate a low-battery condition.

## Real Time Clock battery

The Real Time Clock (RTC) battery provides power for the internal real time clock and calendar. It also maintains the system configuration.

If the RTC battery becomes completely discharged, the system loses this data and the real time clock and calendar stop working.

*The computer's RTC battery is a lithium ion battery and should be replaced only by your dealer or by a TOSHIBA service representative. The battery can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations.*

- *You can change the settings of the Real Time Clock by pressing F2 in POST.*
- *After configuring the time and date for the Real Time Clock battery, we recommend that you turn the power status of your computer to "ON" so that the Real Time Clock battery is charged. Refer to Chapter 8 Troubleshooting, for details.*

If the following message is displayed on the LCD:

**ERROR 0271: Check date and time settings.**
**WARNING 0251: System CMOS checksum bad-Default configuration used.**
**Press [F1] to resume, [F2] to setup.**

The charge in the RTC battery is getting low or has been exhausted. You will need to set the date and time within the BIOS setup using the following steps:

1. Press **F2** key - the BIOS setup screen will be displayed.
2. Set the date in **System Date**.
3. Set the time in **System Time**.
4. Press **F10** key. Confirmation message will appear.

Press **Enter** key. BIOS setup will terminate and the computer will be rebooted.

*After configuring the date and time it is recommended that you switch the computer on and then leave it in this state so that the Real Time Clock battery can be charged.*

# Care and use of the battery pack

The battery pack is a vital component of portable computing. Taking proper care of it will help ensure longer operating time on battery power as well as a longer life for your battery pack. Follow the instructions in this section carefully to ensure safe operation and maximum performance.

## Safety precautions

Mishandling of batteries can cause death, serious injury or property damage. Carefully observe the following advisories:

**Danger:** Indicates an imminently hazardous situation, which could result in death or serious injury, if you do not follow instructions.

**Warning:** Indicates a potentially hazardous situation, which could result in death or serious injury, if you do not follow instructions.

**Caution:** Indicates a potentially hazardous situation, which if not avoided, may result in moderate or minor injury or property damage.

**Note:** Provides important information.

### *Danger*

1. Never try to dispose of the battery pack by burning or expose it to a heating device such as a microwave oven. The battery pack could explode and cause bodily injury.
2. Never try to disassemble, repair or otherwise tamper with a battery pack. The battery pack will overheat and ignite. Leakage of caustic alkaline solution or other electrolytic substances will cause fire or injury, possibly resulting in death or serious injury.
3. Never short-circuit the battery pack by contacting the terminals with a metal object. A short-circuit can cause fire or otherwise damage the battery pack and possibly cause injury. To avoid accidental short-circuit, always wrap the battery pack in plastic and cover the terminals with electrical tape when storing or disposing of the battery pack.
4. Never puncture the battery pack with a nail or other sharp object. Never strike it with a hammer or other object. Never step on it.
5. Never try to charge the battery pack in any manner other than that described in the User's manual. Never connect the battery pack to a plug socket or to an automobile’s cigarette lighter socket. It may rupture or ignite.
6. Use only the battery pack supplied with the computer or other device or a battery pack approved by the computer or device’s manufacturer. Battery packs have different voltages and terminal polarities. Use of an improper battery could cause smoke, fire or rupture of the battery pack.
7. Never subject a battery pack to heat, such as storage near a heat source. Exposure to heat can cause the battery pack to ignite, explode or leak caustic liquid and cause death or serious injury. It could also fail or malfunction causing data loss.

8. Never expose the battery pack to abnormal shock, vibration or pressure. The battery pack's internal protective device will fail, causing it to overheat, explode, ignite or leak caustic liquids possibly resulting in death or serious injury.
9. Never let a battery pack become wet. A wet battery pack will overheat, ignite or rupture possibly resulting in death or serious injury.

### Warning

1. Never allow caustic electrolyte fluid leaked from a battery pack to contact your eyes, skin or clothing. If caustic electrolyte fluid should contact your eyes, immediately wash your eyes with large amounts of running water and seek medical attention, to help prevent eye damage. If electrolyte fluid should contact your skin immediately wash it under running water to prevent rash. If it contacts your clothes, promptly remove them to prevent the fluid from contacting your skin or eyes.
2. Immediately turn off the power, disconnect the AC adaptor and remove the battery if any of the following events are observed in the battery pack: offensive or unusual odor, excessive heat, discoloration or deformation. Never use the computer again until it has been checked by a TOSHIBA service provider. It might generate smoke or fire, or the battery pack might rupture.
3. Make sure the battery is securely installed in the computer before attempting to charge the battery pack. Improper installation could generate smoke or fire, or cause the battery pack to rupture.
4. Keep the battery pack out of reach of infants and children. It can cause injury.

### Caution

1. Never continue to use a battery pack after its recharging capacity has become impaired, or after the display of a warning message indicating that the battery pack's power is exhausted. Continued use of an exhausted or impaired battery pack could cause the loss of data.
2. Never dispose of battery packs with normal trash. Bring them to your TOSHIBA dealer or to another recycling center to save resources and prevent environmental damage. Cover the terminals with electrical tape to prevent short-circuits, which could cause the battery pack to ignite or rupture.
3. Use only battery packs recommended by TOSHIBA as replacements.
4. Always make sure the battery pack is installed correctly and securely. Otherwise, a battery pack could fall out and possibly cause injury.
5. Charge the battery pack only in an ambient temperature between 5 and 35 degrees Celsius. Otherwise, the electrolyte solution might leak, battery pack performance might deteriorate and the battery life might be shortened.

6. Be sure to monitor the remaining battery power. If the battery pack and real time clock battery discharge completely, Standby and Suspend will not function and data in memory will be lost. Also, the computer might register an incorrect time and date. In this case, connect the AC adaptor to recharge the batteries.
7. Never install or remove the battery pack without first turning off the power and disconnecting the AC adaptor. Never remove the battery pack while the computer is in Suspend or Standby Mode. Data will be lost.

### *Note*

1. Never remove the battery pack while the Wake-up on LAN function is enabled. Data will be lost. Before you remove a battery pack, disable the Wake-up on LAN function.
2. After the battery pack is charged, avoid leaving the AC adaptor connected and the computer turned off for more than a few hours at a time. Continuing to charge a fully-charged battery pack can damage the battery.

## Charging the batteries

When the power in the battery pack becomes low, the **Battery** indicator flashes orange indicating that only a few minutes of battery power remain. If you continue to use the computer while the **Battery** indicator flashes, the computer enables Hibernation Mode (so you don't lose data) and automatically turns off.

*The computer enters Hibernate Mode only if Hibernation is enabled at the Hibernate tab in Power Options.*

You must recharge a battery pack when it becomes discharged.

### *Procedures*

To recharge a battery pack while it is installed in the computer, connect the AC adaptor to the **DC IN 19V** jack and plug the other end into a working outlet.

The **Battery** indicator glows orange when the battery is being charged.

*Use only the computer connected to an AC power source to charge the battery pack. Never attempt to charge the battery pack with any other charger.*

### Time

The following table shows the approximate time required to fully charge a discharged battery.

**Charging time (hours)**

| Battery type | Power on | Power off |
|---|---|---|
| Battery pack (4300 mAh) | About 6 or longer | About 3 |
| RTC battery | About 24 | Doesn't charge |

*The charging time when the computer is on is affected by ambient temperature, the temperature of the computer and how you use the computer. If you make heavy use of external devices, for example, the battery might scarcely charge at all during operation. Refer also to the section Maximizing battery operating time.*

### Battery charging notice

The battery may not charge right away under the following conditions:

- The battery is extremely hot or cold. If the battery is extremely hot, it might not charge at all. To ensure the battery charges to its full capacity, charge the battery at room temperature of 10° to 30°C (50° to 88°F).
- The battery is nearly completely discharged. Leave the AC adaptor connected for a few minutes and the battery should begin charging.

The **Battery** indicator may show a rapid decrease in battery operating time when you try to charge a battery under the following conditions:

- The battery has not been used for a long time.
- The battery has completely discharged and been left in the computer for a long time.
- A cool battery is installed in a warm computer.

In such case, follow the steps below.

1. Fully discharge the battery by leaving it in the computer with the power on until the power automatically shuts off.
2. Plug in the AC adaptor.
3. Charge the battery until the **Battery** indicator glows green.

Repeat these steps two or three times until the battery recovers normal capacity.

*Leaving the AC adaptor connected will shorten battery life. At least once a month, run the computer on battery power until the battery is fully discharged, then recharge the battery.*

## Monitoring battery capacity

Remaining battery power can be monitored in the taskbar and in the Windows® Power Options control panel utility.

- *Wait at least 16 seconds after turning on the computer before trying to monitor the remaining operating time. The computer needs this time to check the battery's remaining capacity and to calculate the remaining operating time, based on the current power consumption rate and remaining battery capacity. The actual remaining operating time may differ slightly from the calculated time.*
- *With repeated discharges and recharges, the battery's capacity will gradually decrease. Therefore, an often used, older battery will not operate for as long as a new battery even when both are fully charged. In this case, Windows® Power Options will indicate a 100% charge for both the old and new battery, but the displayed estimated time remaining will be shorter for the older battery.*

## Maximizing battery operating time

A battery's usefulness depends on how long it can supply power on a single charge.

How long the charge lasts in a battery depends on:

- How you configure the computer (for example, whether you enable battery-power saving options). The computer provides a battery save mode, which can be set in the Windows® Power Options to conserve battery power. This mode has the following options:
  - System Standby
  - System Hibernation
  - Monitor power off
- How often and how long you use the hard disk, optical disc and the floppy disk drive.
- How much charge the battery contained to begin with.
- How you use optional devices, such as a PC Card, to which the battery supplies power.
- Enabling Standby Mode conserves battery power if you are frequently turning the computer off and on.
- Where you store your programs and data.
- Closing the display when you are not using the keyboard saves power.
- Operating time decreases at low temperatures.
- The condition of the battery terminals. Make sure the battery terminals stay clean by wiping them with a clean dry cloth before installing the battery pack.

## Retaining data with power off

When you turn off your computer with fully charged batteries, the batteries retain data for the following approximate time periods.

| | |
|---|---|
| **Battery pack (4300 mAh)** | About 3 days (Standby Mode)<br>About 30 days (Boot mode) |
| **RTC battery** | 30 days |

## Extending battery life

To maximize the life of your battery pack:

- At least once a month, disconnect the computer from a power source and operate it on battery power until the battery pack fully discharges. Before doing so, follow the steps below.

  1.Turn off the computer's power.

  2.Disconnect the AC adaptor and turn on the computer's power. If it does not turn on go to step 4.

  3.Operate the computer on battery power for five minutes. If the battery pack has at least five minutes of operating time, continue operating until the battery pack is fully discharged. If the **Battery** indicator flashes or there is some other warning to indicate a low battery, go to step 4.

  4.Connect the AC adaptor to the computer and the power cord to a power outlet. The **Battery** indicator should glow orange to indicate that the battery pack is being charged. If the **Battery** indicator does not glow, power is not being supplied. Check the connections for the AC adaptor and power cord.

  5.Charge the battery pack until the Battery indicator glows green.
- If you have extra battery packs, rotate their use.
- If you will not be using the system for an extended period, more than one month, remove the battery pack.
- Disconnect the AC adaptor when the battery is fully charged. Overcharging makes the battery hot and shortens life.
- If you are not going to use the computer for more than eight hours, disconnect the AC adaptor.
- Store spare battery packs in a cool dry place out of direct sunlight.

# Replacing the battery pack

When the battery pack reaches the end of its operating life you will need to install a new one. The life of the battery pack is generally about 500 recharges. If the **Battery** indicator flashes orange shortly after fully recharging the battery, the battery pack needs to be replaced.

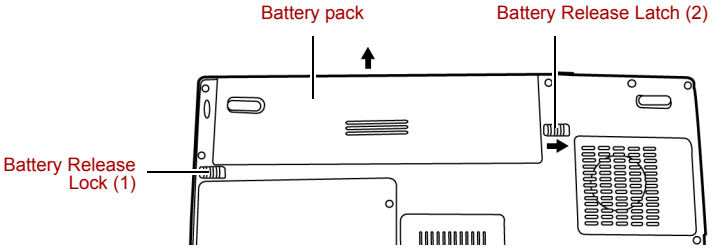
You might also replace a discharged battery pack with a charged spare when you are operating your computer away from an AC power source. This section explains how to remove and install the battery pack.

## Removing the battery pack

To replace a discharged battery, follow the steps below.

- *When handling battery packs, do not short-circuit the terminals. Also do not drop, hit or otherwise apply impact; do not scratch or break the casing and do not twist or bend the battery pack.*
- *Do not remove the battery pack while the computer is in Standby Mode. Data is stored in RAM, so if the computer loses power it will be lost.*
- *In Hibernation Mode, data will be lost if you remove the battery or disconnect the AC adaptor before the save is completed. Wait for the **Built-in HDD** indicator to go out.*
- *Do not touch the latch while holding the computer. Or you may get injured by the dropped battery by unintentional release of the latch.*

1. Save your work.
2. Turn the computer's power off. Make sure the **Power** indicator is off.
3. Remove all cables connected to the computer.
4. Turn the computer upside down.
5. Slide and hold the battery release latch (2) to free the battery pack after moving the battery release lock (1) into its unlock position - then slide the battery pack out of the computer.




*Releasing the battery pack*

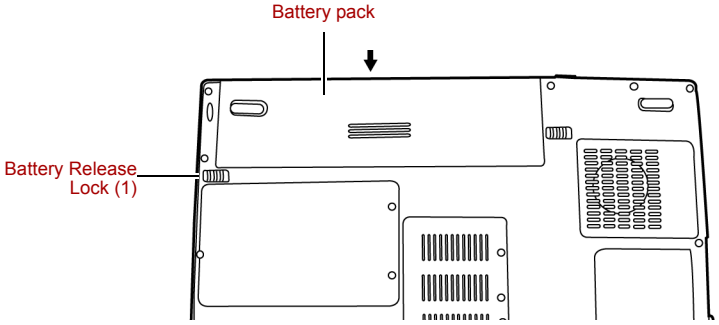
*For environmental reasons, do not throw away a spent battery pack. Please return spent battery packs to your TOSHIBA dealer.*

## Installing the battery pack

To install a battery, follow the steps below.

- *The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.*
- *Do not touch the latch while holding the computer. Or you may get injured by the dropped battery by unintentional release of the latch.*

1. Turn the computer's power off.
2. Disconnect all cables connected to the computer.
3. Insert the battery pack.
4. Ensure the battery release lock (1) is moved into its locked position.




*Securing the battery pack*

# Power-up modes

The computer has the following power-up modes:

- Boot Mode: Computer shuts down without saving data. Always save your work before you turn the computer off in boot mode.
- Hibernation Mode: Data in memory is saved to the hard disk.
- Standby Mode: Data is maintained in the computer's main memory.

*Refer also to the sections Turning on the power and Turning off the power in Chapter 3, Getting Started.*

## Windows® utilities

You can specify the setting in the Windows® Power Options.

## Hot keys

You can use hot keys **Fn + F3** to enter Standby Mode and **Fn + F4** to enter Hibernation Mode. Refer to Chapter 5, *The Keyboard* for details.

# Panel power off/on

You can set up your computer so that power turns off automatically when you close the display panel. When you open the panel, power turns on in Standby Mode or Hibernation Mode but not in boot mode.

*If the panel power off function is enabled and you use Shut down Windows®, do not close the display until the shut down function is completed.*

# System Auto Off

This feature turns the system off automatically if it is not used for a set duration. The system shuts down in Standby Mode or Hibernation Mode in Windows®.

# Chapter 7

# Optional Devices

Optional devices can expand the computer's capabilities and its versatility. This chapter describes connection or installation of the following devices, which are available from your TOSHIBA dealer:

### *Cards/memory*

- PC card
- Memory expansion

### *Power devices*

- Additional battery pack
- Additional AC adaptor

### *Peripheral devices*

- USB floppy disk drive
- External monitor
- TV

### *Other*

- Security lock

# PC card

The computer is equipped with a PC Card expansion slot that can accommodate one 5 mm Type II card. Any PC Card that meets industry standards (manufactured by TOSHIBA or other vendor) can be installed. The slot supports 16-bit PC Cards, including PC Card 16's multifunction card and CardBus PC Cards.

CardBus supports the new standard of 32-bit PC Cards. The bus provides superior performance for the greater demands of multimedia data transmission.

## Inserting a PC Card

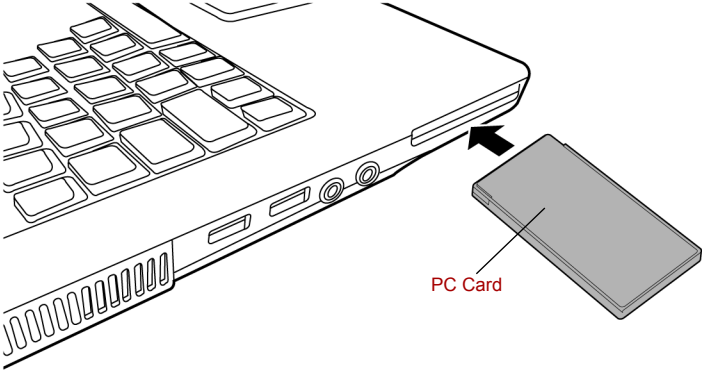
The PC Card connector is located on the left side of the computer.

Windows® hot-install feature lets you insert PC Cards while the computer's power is on.

- *Do not insert a PC Card while the computer is in standby or Hibernation Mode. Some cards might not work properly.*
- *A hard disk drives or CD-ROM/DVD-ROM connected to a 16-bit PC Card, might affect the performance of the computer's sound system and data transmission, including slower transmission speeds and dialing errors.*

To insert a PC Card, follow the steps below.

1. Insert the PC Card.
2. Press gently to ensure a firm connection.




*Inserting the PC Card*

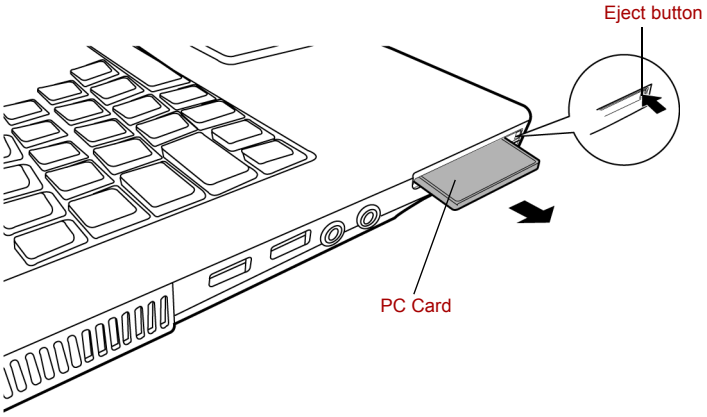
After inserting the card, refer to the card's documentation and check the configuration in Windows® to make sure it is appropriate for your card.

## Removing a PC Card

- *Before removing a PC Card, make sure that any applications or system services do not use the card.*
- *Be sure to disable the PC Card prior to removing it. Otherwise, the system may be fatally damaged.*

To remove the PC Card, follow the steps below.

1. Open the **Safely Remove Hardware** icon on the Task Bar and disable the PC Card.
2. Press the PC Card eject button to extend it.
3. Press the extended eject button to pop the card out slightly.
4. Grasp the PC Card and draw it out.




*Removing the PC Card*

# Memory expansion

You can install additional memory in the computer's memory module socket to increase the amount of RAM. This section describes how to install and remove a memory module.

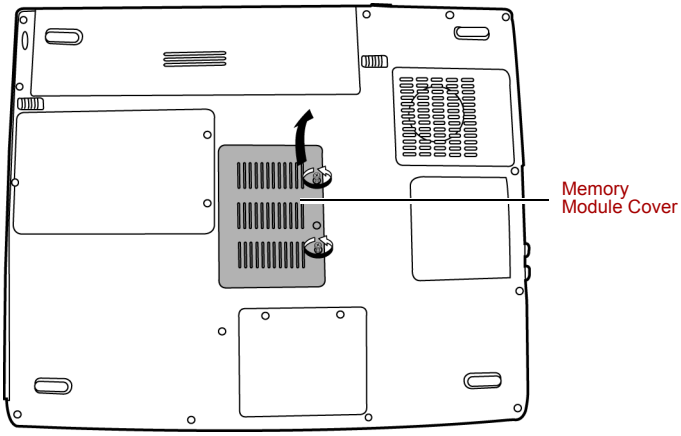
- *Use only memory modules approved by TOSHIBA.*
- *Do not try to install or remove a memory module under the following conditions. You can damage the computer and the module. Also, data will be lost.*
  a. *The computer is turned on.*
  b. *The computer was shut down using the Standby Mode or Hibernation Mode.*
- *The beep sound rings when incorrect memory is inserted. Refer to Memory expansion section in Chapter 8, Troubleshooting, for details.*
- *Expansion memory is a precision electronic component that may be fatally damaged by static electricity. Since human body has slight static electricity, be sure to discharge static electricity from your body before installing an expansion memory module. To discharge your body's static electricity, simply touch any metal close to you with bare hands.*

*Use a point size 1 Phillips screwdriver to remove and fasten the screws. Use of an incorrect screwdriver can damage the screw heads.*

## Installing a memory module

Follow the steps below to install a memory module.

1. Set the computer to boot mode and turn off the power.
2. Remove all cables connected to the computer.
3. Turn the computer upside down and remove the battery pack (refer to Chapter 6, *Power and Power-Up Modes*).
4. Loosen the screws securing the memory module cover.
5. Slide your fingernail or a thin object under the cover and lift it off.



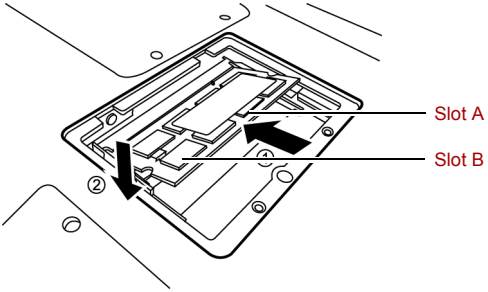

*Removing the memory module cover*

6. Lift one side of the insulator sheet and fit the module's connectors into the computer's connectors at about a 45 degree angle. Press the module carefully to ensure a firm connection.

*Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*

*You can install the main memory module in either slot.*

7. Push the module down so it lies flat. Latches on either side will click into place to secure the module.




*Installing the memory module*

8. Seat the cover and secure it with the screws.
9. Replace the battery pack as described in Chapter 6, *Power and Power-Up Modes*.
10. Turn the power on and make sure the added memory is recognized. Open **System** in the Control Panel and click the **General** tab.

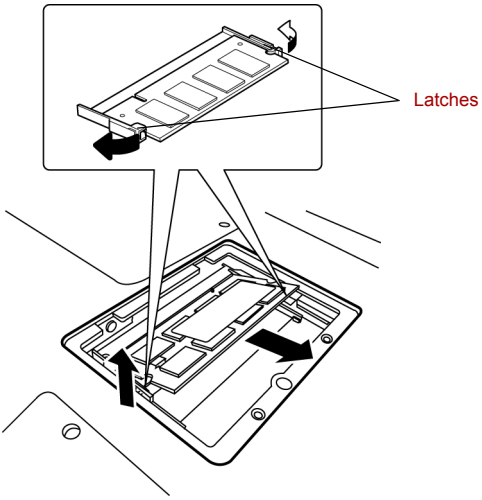
## Removing a memory module

To remove the memory module, make sure the computer is in boot mode then:

1. Be sure the power is off and all cables are disconnected from the computer.
2. Turn the computer upside down and remove the battery and the screws securing the memory module cover.
3. Slide your fingernail or a thin object under the cover and lift it off.
4. Lift one side of the insulator and push the latches to the outside to release the module. A spring will force one end of the module up.

5. Grasp the module by the sides and pull it out.

- *If you use the computer for a long time, the memory modules will become hot. In this case, let the memory modules cool to room temperature before you replace them. Or you will get burnt if you touch any of them.*
- *Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*




*Removing the memory module*

6. Seat the cover and secure it with a screw and replace the battery pack.

# Additional battery pack

You can increase the portability of the computer with additional battery packs. If you're away from an AC power source and your battery runs low, you can replace it with a freshly charged battery. Refer to Chapter 6, *Power and Power-Up Modes*.

# Additional AC adaptor

If you frequently transport the computer between different sites such as your home and office, purchasing an AC adaptor for each location will reduce the weight and bulk of your carrying load.

# USB floppy disk drive

The 3 ½" external floppy disk drive module can be connected to the USB port. For details on connecting the 3 ½" external floppy disk drive module, refer to Chapter 4, *Operating Basics*.

# External monitor

An external analog monitor can be connected to the external monitor port on the computer. The computer supports several video modes. Refer to Appendix B, *Display Controller and Modes*. To connect a monitor, follow the steps below.

1. Turn the computer off.
2. Connect the monitor to the external monitor port.
3. Turn the monitor's power on.
4. Turn the computer on.

When you turn on the power, the Windows® Bootup screen (Windows® Logo) appears on the display device.

However, the Windows® Desktop appears on a display device that you used last time to shut down your PC, if the display device exists when you turn on the power.

To change the display settings, press **Fn+F5**. If you disconnect the monitor before you turn the computer off, be sure to press **Fn+F5** to switch to the internal display. Refer to Chapter 5, *The Keyboard*, for details on using hot keys to change the display setting.

# TV

A TV output feature is provided with some models. You can connect a television set to the Video out jack on the computer. Follow the steps below.

*If a television is connected to the computer, set the TV type in Display Properties. Follow the steps below.*

- *TV single*

  1. *Click* **start** *and click* **Control Panel**, *then* **Appearance and Themes**.
  2. *Double-click the* **Display** *icon to open the Display Properties window.*
  3. *Click the* **Settings** *tab and click the* **Advanced** *button.*
  4. *Click* **Intel® Extreme Graphics2 for Mobile**, *click* **Graphics Properties**, *click* **Device** *tab and the* **Television** *icon.*
  5. *Change the Settings which are suitable for your TV and suitable according to the region you are.*
  6. Click **Apply** *and/or* **OK** at Intel® 82852/82855 GM/GME Graphics Controller Property.

- *LCD/TV Mode (Dual Display Clone / Extended Desktop)*

  1. *Click* **start** *and click* **Control Panel**, *then* **Appearance and Themes**.
  2. *Double-click the* **Display** *icon to open the Display Properties window.*
  3. *Click the* **Settings** *tab and click the* **Advanced** *button.*
  4. *Click* **Intel® Extreme Graphics2 for Mobile**, *click* **Graphics Properties**, *click* **Device** *tab and the* **Intel(R) Dual Display Clone** *icon or* **Extended Desktop** *icon.*
  5. *Click* **Device Settings**.
  6. *Change the Settings which are suitable for your TV and suitable according to the region you are and click* **OK** *at Device Settings.*
  7. *Click* **Apply** *and/or* **OK**.*at Intel® 82852/82855 GM/GME Graphics Controller Property.*

- *There are 10 Video standard types in the list. Select one of the Video Standard types according the region you are.*
  - *NTSC-M (for the United States)*
  - *NTSC-J (for Japan)*
  - *PAL-B (for Europe)*

### Changing the resolution

If you want to change the resolution, follow the steps below.

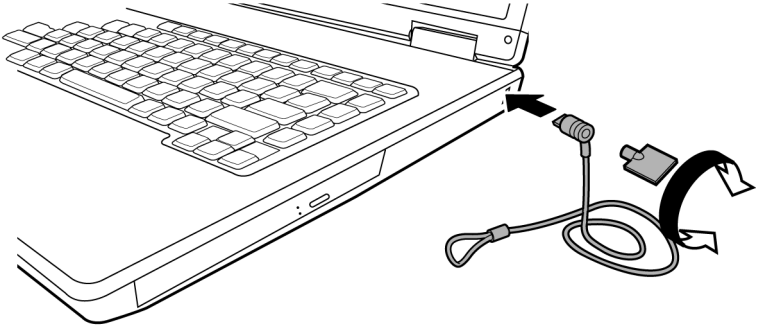
1. *Click* **start** *and click* **Control Panel***, then* **Appearance and Themes**.
2. *Double-click the* **Display** *icon to open the Display Properties window.*
3. Select the **Settings** tab and click **Advanced**.
4. Select the **Adapter** tab, then select **List all modes**.
5. Select a resolution from the menu.

## Security lock

Security locks enable you to anchor your computer to a desk or other heavy object to help prevent unauthorized removal of the computer.

The computer has a security lock slot on the left side. Attach one end of a cable to a desk and the other end to the security lock slot.

1. Turn the computer so the left side faces you.
2. Align the holes for the security lock and attach the lock.



*Security lock*

# Chapter 8

# Troubleshooting

TOSHIBA designed the computer for durability. However, should problems occur, following the procedures in this chapter can help to determine the cause.

All readers should become familiar with this chapter. Knowing what might go wrong can help prevent problems from occurring.

## Problem solving process

Resolving problems will be much easier if you observe the following guidelines:

- Stop immediately when you recognize a problem exists. Further action may result in data loss or damage. You may destroy valuable problem related information that can help solve the problem.
- Observe what is happening. Write down what the system is doing and what actions you performed immediately before the problem occurred. If you have a printer attached, print a copy of the screen using PrtSc.

The questions and procedures offered in this chapter are meant as a guide, they are not definitive problem solving techniques. Many problems can be solved simply, but a few may require help from your dealer. If you find you need to consult your dealer or others, be prepared to describe the problem in as much detail as possible.

## Preliminary checklist

Consider the simplest solution first. The items in this checklist are easy to fix and yet can cause what appears to be a serious problem.

- Make sure you turn on all peripheral devices before you turn on the computer. This includes your printer and any other external device you are using.
- Before you attach an external device, turn the computer off. When you turn the computer back on it recognizes the new device.
- Make sure all options are set properly in the setup program.
- Check all cables. Are they correctly and firmly attached? Loose cables can cause signal errors.
- Inspect all connecting cables for loose wires and all connectors for loose pins.
- Check that your floppy disk or CD/DVD-ROM is correctly inserted and that the floppy disk's write protect tab is correctly set.

Make notes of your observations and keep them in a permanent error log. This will help you describe your problems to your dealer. If a problem recurs, the log will help you identify the problem faster.

## Analyzing the problem

Sometimes the system gives clues that can help you identify why it is malfunctioning. Keep the following questions in mind:

- Which part of the system is not operating properly: keyboard, floppy disk drives, hard disk drive, optical media drive, display. Each device produces different symptoms.
- Is the operating system configuration set properly? Check the configuration options.
- What appears on the display screen? Does it display any messages or random characters? Print a copy of the screen if you have a printer attached. Look up the messages in the software and operating system documentation. Check that all connecting cables are correctly and firmly attached. Loose cables can cause erroneous or intermittent signals.
- Do any indicators light? Which ones? What color are they? Do they stay on or blink? Write down what you see.
- Do you hear any beeps? How many? Are they long or short? Are they high pitched or low? Is the computer making any unusual noises? Write down what you hear.

Record your observations so you can describe them to your dealer.

| | |
|---|---|
| Software | The problems may be caused by your software or disk. If you cannot load a software package, the media may be damaged or the program might be corrupted. Try loading another copy of the software.<br>If an error message appears while you are using a software package, check the software documentation. These documents usually include a problem solving section or a summary of error messages.<br>Next, check any error messages in the operating system documentation. |
| Hardware | If you cannot find a software problem, check your hardware.<br>First run through the items in the preliminary checklist above. If you still cannot correct the problem, try to identify the source. The next section provides checklists for individual components and peripherals. |

# Hardware and system checklist

This section discusses problems caused by your computer's hardware or attached peripherals. Basic problems may occur in the following areas:

- System start-up
- Self test
- Power
- Keyboard
- LCD panel
- Hard disk drive
- DVD-ROM and CD-R/RW drive
- DVD Super Multi drive
- Floppy disk drive (optional)
- PC Card
- Pointing device
- USB
- Memory expansion
- Sound system
- Monitor
- Modem
- LAN
- Wireless LAN
- Printer

## System start-up

When the computer does not start properly, check the following items:

- Self Test
- Power Sources
- Power-on Password

## Self test

When the computer starts up, the self test will be run automatically, and the following will be displayed:

```
In Touch with Tomorrow
TOSHIBA
```

This message remains on the screen for a few seconds.

If the self test is successful, the computer tries to load the operating system, depending on how the Boot Priority is set in the TOSHIBA HW Setup program.

If any of the following conditions are present, the self test failed:

- The computer stops and does not proceed to display information or messages except the TOSHIBA logo.
- Random characters appear on the screen, and the system does not function normally.
- The screen displays an error message.

Turn off the computer and check all cable connections. If the test fails again, contact your dealer.

## Power

When the computer is not plugged into an AC outlet, the battery pack is the primary power source. However, your computer has a number of other power resources, including an intelligent power supply and a Real Time Clock battery. These resources are interrelated and any one could affect apparent power problems. This section provides checklists for AC power and the battery. If you cannot resolve a problem after following them, the cause could lie with another power resource. In such a case, contact your dealer.

### *Overheating power down*

If the computer's internal temperature becomes too high, the computer will automatically enter Hibernation Mode or Standby Mode and shut down. If the computer has reached room temperature and still does not start, or if it starts but shuts down quickly contact your dealer.

## AC power

If you have trouble turning on the computer with the AC adaptor connected, check the **Battery** Indicator indicator. Refer to Chapter 6, *Power and Power-Up Modes* for more information.

| Problem | Procedure |
|---|---|
| AC adaptor doesn't power the computer | Check the connections. Make sure the cord is firmly connected to the computer and a power outlet. |
| | Check the condition of the cord and terminals. If the cord is frayed or damaged, replace it. If the terminals are soiled, wipe them with cotton or a clean cloth. |
| | If the AC adaptor still does not power the computer, contact your dealer. |

## Battery

If you suspect a problem with the battery, check the **Battery** indicator. For information on indicator and battery operation refer to Chapter 6, *Power and Power-Up Modes*.

| Problem | Procedure |
|---|---|
| Battery doesn't power the computer | The battery may be discharged. Connect the AC adaptor to charge the battery. |
| Battery doesn't charge when the AC adaptor is attached ( **Battery** indicator does not glow orange.) | If the battery is completely discharged, it will not begin charging immediately. Wait a few minutes.<br>If the battery still does not charge, make sure the outlet of the AC adaptor is supplying power.<br>Test it by plugging in an appliance. |
| | Check whether the battery is hot or cold to the touch. If the battery is too hot or too cold, it will not charge properly. Let it reach room temperature. |

| Problem | Procedure |
|---|---|
| | Unplug the AC adaptor and remove the battery to make sure the terminals are clean. If necessary wipe them with a soft dry cloth dipped in alcohol.<br>Connect the AC adaptor and replace the battery. Make sure it is securely seated.<br>Check the **Battery** indicator. If it does not glow, let the computer charge the battery for at least 20 minutes. If the **Battery** indicator glows after 20 minutes, let the battery continue to charge at least another 20 minutes before turning on the computer.<br>If the indicator still does not glow, the battery may be at the end of its operating life. Replace it.<br>If you do not think the battery is at the end of its operating life, see your dealer. |
| Battery doesn't power the computer as long as expected | If you frequently recharge a partially charged battery, the battery might not charge to its full potential. Fully discharge the battery, then try to charge it again. |
| | Check the power consumption settings in the Power Options. Consider using a power saving feature. |

## Real Time Clock

| Problem | Procedure |
|---|---|
| The BIOS setting and system date/time are lost. | Charge in the RTC battery is exhausted or getting low. You will need to set the date and time in the BIOS setup screen using the following procedure<br>1. Press **F2** key. BIOS setup will boot up.<br>2. Set the date in **System Date**.<br>3. Set the time in **System Time**.<br>4. Press **F10** key. Confirmation message will appear.<br>5. Press **Enter** key. BIOS setup will terminate and the computer will be rebooted. |

*After configuring the time and date for the Real Time Clock battery, we recommend that you turn the power status of your computer to "ON" so that the Real Time Clock battery is charged.*

## Keyboard

Keyboard problems can be caused by your setup configuration. For more information refer to Chapter 5, *The Keyboard*.

| Problem | Procedure |
|---|---|
| Some letter keys produce numbers | Check that the numeric keypad overlay is not selected. Press **Fn + F11** and try typing again. |
| Output to screen is garbled | Make sure the software you are using is not remapping the keyboard. Remapping involves reassigning the meaning of each key. Refer to your software's documentation.<br>If you are still unable to use the keyboard, consult your dealer. |

## LCD panel

Apparent LCD problems may be related to the computer's setup.

| Problem | Procedure |
|---|---|
| No display | Press hot keys **Fn + F5** to change the display priority, to make sure it is not set for an external monitor. |
| Problems above remain unresolved or other problems occur | Refer to your software's documentation to determine if the software is causing the difficulty. |
| | Run the diagnostic test.<br>Contact your dealer if the problems continue. |

## Hard disk drive

| Problem | Procedure |
|---|---|
| Computer does not boot from hard disk drive | Check if a floppy disk is in the floppy disk drive. If a floppy disk is inserted, remove it and reboot. |
| | There may be a problem with your operating system files. Refer to your operating system documentation. |
| Slow performance | Your files may be fragmented. Run Disk Defragmenter to check the condition of your files and disk. Refer to your operating system documentation or online help for information on running Disk Defragmenter. |
| | As a last resort, reformat the hard disk. Then, reload the operating system and other files.<br>If problems persist, contact your dealer. |

## DVD-ROM & CD-R/RW drive

For more information, refer to Chapter 4, *Operating Basics*.

| Problem | Procedure |
|---|---|
| You cannot access a CD/DVD in the drive | Make sure the drive's drawer is securely closed. Press gently until it clicks into place. |
| | Open the drawer and make sure the CD/DVD is properly seated. It should lie flat with the label facing up. |
| | A foreign object in the drawer could block laser light from reading the CD/DVD. Make sure there is no obstruction. Remove any foreign object. |
| | Check whether the CD/DVD is dirty. If it is, wipe it with a clean cloth dipped in water or a neutral cleaner. Refer to the *Media care* section in Chapter 4, *Operating Basics*, for details on cleaning. |
| Some CD/DVDs run correctly, but others do not | The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software's needs. Check the CD/DVD's documentation. |
| | Check the type of CD/DVD you are using. The drive supports:<br>DVD-ROM: DVD-ROM, DVD-Video<br>CD-ROM: CD-DA, CD-Text, Photo CD (single/multi-session), CD-ROM Mode 1, Mode 2, CD-ROM XA Mode 2 (Form1, Form2), Enhanced CD (CD-EXTRA)<br>Recordable CD: CD-R, CD-RW |
| | Check the region code on the DVD. It must match that on the DVD-ROM and CD-R/RW drive. Region codes are listed in the *Fixed optical media drives* section in Chapter 2, *The Grand Tour*. |

| Problem | Procedure |
|---|---|
| Cannot write correctly | If you have trouble writing, make sure you are observing the following precautions:<br>■ Use only media recommended by TOSHIBA.<br>■ Do not use the mouse or keyboard during writing.<br>■ Use only the software supplied with the computer for recording.<br>■ Do not run or start other software during writing.<br>■ Do not jar the computer during writing.<br>■ Do not connect/disconnect external devices or install/remove internal cards during writing.<br>If problems persist, contact your dealer. |

## DVD Super Multi drive and DVD Super Multi drive (Supporting Double Layer)

For more information, refer to Chapter 4, *Operating Basics*.

| Problem | Procedure |
|---|---|
| You cannot access a CD/DVD in the drive | Make sure the drive's drawer is securely closed. Press gently until it clicks into place. |
| | Open the drawer and make sure the CD/DVD is properly seated. It should lie flat with the label facing up. |
| | A foreign object in the drawer could block laser light from reading the CD/DVD. Make sure there is no obstruction. Remove any foreign object. |
| | Check whether the CD/DVD is dirty. If it is, wipe it with a clean cloth dipped in water or a neutral cleaner. Refer to the *Media care* section in Chapter 4, *Operating Basics*, for details on cleaning. |

| Problem | Procedure |
|---|---|
| Some CD/DVDs run correctly, but others do not | The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software's needs.Check the CD/DVD's documentation. |
| | Check the type of CD/DVD you are using. The drive supports:<br>DVD-ROM: DVD-ROM, DVD-Videol, DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM<br>CD-ROM: CD-DA, CD-Text, Photo CD (single/multi-session), CD-ROM Mode 1, Mode 2, CD-ROM XA Mode 2 (Form1, Form2), Enhanced CD (CDEXTRA)<br>Recordable CD: CD-R, CD-RW, DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM |
| | Check the region code on the DVD. It must match that on the DVD Super Multi drive. Region codes are listed in the *Fixed optical media drives* section in Chapter 2, *The Grand Tour*. |

## Floppy disk drive

For more information, refer to Chapter 4, *Operating Basics*.

| Problem | Procedure |
|---|---|
| Drive does not operate | There may be a faulty cable connection. Check the connection to the computer and to the drive. |
| Some programs run correctly but others do not | The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software needs. |
| You cannot access the external 3 ½" floppy disk drive | Try another floppy disk. If you can access the floppy disk, the original floppy disk (not the drive) is probably causing the problem.<br>If problems persist, contact your dealer. |

## PC Card

Refer also to Chapter 7, *Optional Devices*.

| Problem | Procedure |
|---|---|
| PC Card error occurs | Reseat the PC Card to make sure it is firmly connected. |
| | Make sure the connection between the external device and the card is firm. |
| | Check the card's documentation.<br>If problems persist, contact your dealer. |

## Pointing device

If you are using a USB mouse, also refer to the USB section in this chapter and to your mouse documentation.

### *TouchPad*

| Problem | Procedure |
|---|---|
| On-screen pointer does not respond to Pad operation | The system might be busy. If the pointer is shaped as an hourglass, wait for it to return to its normal shape and try again to move it. |
| Double-tapping does not work | Try changing the double-click speed setting in the mouse control utility.<br>1. Open the **Control Panel**, select the **Printers and Other Hardware** icon and press **Enter**.<br>2. Select the **Mouse** icon and press **Enter**.<br>3. Click the **Buttons** tab.<br>4. Set the double-click speed as instructed and click **OK**.<br>If problems persist, contact your dealer. |
| The mouse pointer moves too fast or too slow | Try changing the speed setting in the mouse control utility.<br>1. Open the **Control Panel**, select the **Printers and Other Hardware** icon and press **Enter**.<br>2. Select the **Mouse** icon and press **Enter**.<br>3. Click the **Pointer Options** tab.<br>4. Set the speed as instructed and click **OK**. |

| Problem | Procedure |
|---|---|
| The response of the TouchPad is too sensitive | Adjust the touch sensitivity.<br>1. Open the **Control Panel**.<br>2. Click the **Printers and Other Hardware** icon.<br>3. Click the ***Mouse*** icon.<br>4. Click the **Device Setting** tab.<br>5. Click the **Setting** button.<br>6. The Properties for Synaptics Touchpad on PS/2 port screen appears. Double-click Sensitivity in the Select an item section on the left side of the screen.<br>7. PalmCheck and Touch Sensitivity are displayed. Click Touch **Sensitivity**.<br>8. Move the slide bar for Touch Sensitivity to make an adjustment. Click the **OK** button.<br>9. Click the **OK** button on the Device Setting tab. |

## *USB mouse*

| Problem | Procedure |
|---|---|
| On-screen pointer does not respond to mouse operation | The system might be busy. If the pointer is shaped as an hourglass, wait for it to resume its normal shape and try again to move it. |
| | Make sure the mouse is properly connected to the USB port. |
| Double-clicking does not work | Try changing the double-click speed setting in the mouse control utility.<br>1. Open the **Control Panel**, select the **Printers and Other Hardware** icon, and press **Enter**.<br>2. Select the **Mouse** icon and press **Enter**.<br>3. Click the **Buttons** tab.<br>4. Set the double-click speed as instructed and click **OK**. |

| Problem | Procedure |
|---|---|
| The mouse pointer moves too fast or too slow | Try changing the speed setting in the mouse control utility.<br>1. Open the **Control Panel**, select the **Printers and Other Hardware** icon, and press **Enter**.<br>2. Select the **Mouse** icon and press **Enter**.<br>3. Click the **Pointer Options** tab.<br>4. Set the speed as instructed and click **OK**. |
| The mouse pointer moves erratically | The mouse might be dirty. Refer to your mouse documentations for instructions on cleaning.<br>If problems persist, contact your dealer. |

## USB

Refer also to your USB device's documentation.

| Problem | Procedure |
|---|---|
| USB device does not work | Check for a firm cable connection between the USB ports on the computer and the USB device. |
| | Make sure the USB device drivers are properly installed. Refer to your Windows® XP documentation for information on checking the drivers.<br>If problems persist, contact your dealer. |

## Memory expansion

Refer also to Chapter 7, *Optional Devices*, for information on installing memory modules.

| Problem | Procedure |
|---|---|
| The computer hangs up and issues sounds. (A long beep, three short beeps, three short beeps, and then a long beep.) | Make sure the memory module installed in the expansion slot is compatible with the computer.<br>If an incompatible module has been installed, follow the steps below.<br>1. Turn off the power.<br>2. Disconnect the AC adaptor and all periph-eral devices.<br>3. Remove the battery pack.<br>4. Remove the memory module.<br>5. Replace the battery pack and/or connect the AC adaptor.<br>6. Turn on the power.<br>If problems persist, contact your dealer. |

## Sound system

Refer also to documentation for your audio devices.

| Problem | Procedure |
|---|---|
| No sound is heard | Check the software volume settings. |
| | Make sure the headphone connection is secure. If problems persist, contact your dealer. |

## Monitor

Refer also to Chapter 7, *Optional Devices*, and to your monitor's documentation.

| Problem | Procedure |
|---|---|
| Monitor does not turn on | Make sure that the external monitor's power switch is on. Confirm that the external monitor's power cable is plugged into a working power outlet. |
| No display | Try adjusting the contrast and brightness controls on the external monitor. |
| | Press hot keys **Fn + F5** to change the display priority and make sure it is not set for the internal display. |
| Display error occurs | Check that the cable connecting the external monitor to the computer is attached firmly.<br>If problems persist, contact your dealer. |

## Modem

| Problem | Procedure |
|---|---|
| Communication software can't initialize modem | Make sure the computer's internal modem settings are correct. Refer to Phone and Modem Properties in the Control Panel. |
| You can hear a dial tone but can't make a call | If the call is going through a PBX machine, make sure the communication application's tone dial detection feature is disabled.<br>You can also use the ATX command. |
| You place a call, but a connection can't be made | Make sure the settings are correct in your communications application. |

| Problem | Procedure |
|---|---|
| After making a call you can't hear a ring | Make sure the tone or pulse selection in your communications application is set correctly.<br>You can also use the ATD command. |
| Communication is cut off unexpectedly | The computer will automatically cut off communication when connection with the carrier is not successful for a set time interval. Try lengthening this time interval. |
| A **CONNECT** display is quickly replaced by **NO CARRIER** | Check the error control setting in your communications application.<br>You can also use the AT\N command. |
| Character display becomes garbled during a communication | In data transmission, make sure the parity bit and stop bit settings correspond with those of the remote computer.<br>Check the flow control and communication protocol. |
| You cannot receive an incoming call | Check the rings before auto answer setting in your communications application.<br>You can also use the ATS0 command.<br>If problems persist, contact your dealer. |

## LAN

| Problem | Procedure |
|---|---|
| Cannot access LAN | Check for a firm cable connection between the LAN jack and the LAN hub.<br>If problems persist, consult your LAN administrator. |

## Wireless LAN

If the following procedures do not restore LAN access, consult your LAN administrator. For more information on wireless communication, refer to Chapter 4, *Operating Basics*.

| Problem | Procedure |
|---|---|
| Cannot access Wireless LAN | Make sure the computer's wireless communication switch is set to on.<br>If problems persist, contact your LAN administrator. |

*The Wireless LAN feature is not available on all models.*

### Printer

| Problem | Procedure |
|---|---|
| Printer does not turn on. | Check that the printer is connected to an electric outlet. Make sure the outlet is supplying power by plugging in an appliance. |
| Computer/printer do not communicate | Make sure the printer is turned on and is online (ready to use). |
| | Inspect the cable connecting the printer to the computer for damage. Make sure it is securely connected. |
| | Make sure your software is configured to recognize the printer. Check your printer and software documentation. |
| Printer error | Check your printer documentation.<br>If problems persist, contact your dealer. |

## TOSHIBA support

If you require any additional help using your computer or if you are having problems operating the computer, you may need to contact TOSHIBA for additional technical assistance.

### Before you call

Some problems you experience may be related to software or the operating system, it is important to investigate other sources of assistance first. Before contacting TOSHIBA, try the following:

- Review troubleshooting sections in the documentation for software and peripheral devices.
- If a problem occurs when you are running software applications, consult the software documentation for troubleshooting suggestions. Call the software company's technical support for assistance.
- Consult the dealer you purchased your computer and/or software from. They are your best sources for current information and support.

### Where to write

If you are still unable to solve the problem and suspect that it is hardware related, write to TOSHIBA at the nearest location listed on the below.

| Outside of Europe | In Europe |
|---|---|
| **Australia**<br>TOSHIBA Australia Pty. Ltd.<br>Information Systems Division<br>84-92 Talavera Road<br>North Ryde N.S.W. 2113 Sydney | **Germany & Austria**<br>TOSHIBA Europe (I.E.) GmbH<br>Geschäftsbereich,<br>Deutschland-Österreich<br>Hammfelddamm8,<br>D-41460 Neuss, Germany |
| **Canada**<br>TOSHIBA of Canada Ltd.<br>191 McNabb Street,<br>Markham, Ontario<br>L3R 8H2 | **France**<br>TOSHIBA Systèms France S.A.<br>7, Rue Ampère B.P. 131,<br>92804 Puteaux Cedex |
| **China**<br>TOSHIBA Personal Computer & Network (Shanghai) Co. Ltd.<br>43F, Hongkong new world tower,<br>No. 300 Huai Hai Zhong Road,<br>Shanghai,<br>P.R. China 200021 | **Netherlands**<br>TOSHIBA Information Systems, Benelux B.V.<br>Rivium Boulevard<br>41 2909 LK Capelle a/d IJssel |
| **Singapore**<br>TOSHIBA Singapore Pte. Ltd.<br>438B Alexandra Road #06-01<br>Alexandra Technopark<br>Singapore 119968 | **Spain**<br>TOSHIBA Information Systems, ESPAÑA<br>Parque Empresarial San Fernando<br>Edificio Europa, la Planta,<br>Escalera A 28830 Madrid |
| **United States of America**<br>TOSHIBA America Information Systems, Inc.<br>9740 Irvine Boulevard<br>Irvine, California 92618<br>USA | **United Kingdom**<br>TOSHIBA Information Systems (U.K.) Ltd.<br>TOSHIBA Court<br>Weybridge Business Park<br>Addlestone Road<br>Weybridge, Surrey KT15 2UL |
| | **The Rest of Europe**<br>TOSHIBA Europe (I.E.) GmbH<br>Geschäftsbereich,<br>Deutschland-Österreich<br>Hammfelddamm 8,<br>D-41460 Neuss, Germany |

# Appendix A

# Specifications

This appendix summarizes the computer's technical specifications.

## Physical Dimensions

| | |
|---|---|
| **Weight (typical)** | 2.72 kilograms, configured with: 15"XGA, 512MB x 1 RAM, 40GB HDD, Super Multi drive, modem, LAN (100M Bit), 8cell battery.<br>Weight will vary with other configurations.<br>Above weights are measured at a specific criteria.<br>They are not guaranteed as the maximum weight of the actual product. |
| **Size** | 332 (w) x 270 (d) x 28.5/36.6 (h) millimeters (not including parts that extend beyond the main body) |

## Environmental Requirements

| Conditions | Ambient temperature | Relative humidity |
|---|---|---|
| **Operating** | 5°C (41°F) to 35°C (95°F) | 20% to 80% |
| **Non-operating** | -20°C (-4°F) to 65°C (149°F) | 10% to 90% |
| **Thermal Gradient** | 20°C per hour maximum | |
| **Wet-bulb temperature** | 26°C maximum | |
| **Conditions** | **Altitude (from sea level)** | |
| **Operating** | -60 to 3,000 meters | |
| **Non-operating** | -60 to 10,000 meters maximum | |

### *Power Requirements*

| | |
|---|---|
| **AC adaptor** | 100-240 volts AC<br>50 or 60 hertz (cycles per second) |
| **Computer** | 19 VDC<br>3.42 ampers |

## Built-in Modem

| | | |
|---|---|---|
| **Network control unit (NCU)** | | |
| **Type of NCU** | AA | |
| **Type of line** | Telephone line (analog only) | |
| **Type of dialing** | Pulse<br>Tone | |
| **Control command** | AT commands<br>EIA-578 commands | |
| **Monitor function** | Computer's speaker | |
| **Communication specifications** | | |
| **Communication System** | Data:<br>Fax: | Full duplex<br>Half duplex |

| | | |
|---|---|---|
| **Communication protocol** | Data<br>ITU-T-Rec<br>(Former CCITT) | V.21/V.22/V.22bis/V.32/<br>V.32bis/V.34/V.90 |
| | Bell | 103/212A |
| | Fax:<br>ITU-T-Rec<br>(Former CCITT) | V.17/V.29/V.27ter/V.21 ch2 |
| **Communication Speed** | Data transmission and reception<br>300/1200/2400/4800/7200/9600/12000/14400/<br>16800/19200/21600/24000/26400/28800/31200/<br>33600 bps<br>Data reception only with V.90<br>28000/29333/30666/32000/33333/34666/36000/<br>37333/38666/40000/41333/42666/44000/45333/<br>46666/48000/49333/50666/52000/53333/54666/<br>56000 bps<br>Fax<br>2400/4800/7200/9600/12000/14400 bps | |
| **Transmitting level** | -10 dBm | |
| **Receiving level** | -10 to -40 dBm | |
| **Input/output impedance** | 600 ohms ±30% | |
| **Error correcting** | MNP class 4 and ITU-T V.42 | |
| **Data compression** | MNP class 5 and ITU-T V.42bis | |
| **Power supply** | +3.3V (supplied by computer) | |

# Appendix B

# Display Controller and Modes

## Display controller

The display controller interprets software commands into hardware commands that turn particular picture elements (pels) on or off.

The controller is an advanced Video Graphics Array (VGA) that provides Extended Graphics Array (XGA) support for the internal LCD and external monitors.

The following is available:

- 15.0" XGA, 1024 horizontal × 768 vertical pixels

A high-resolution external monitor connected to the computer can display up to 1920 horizontal and 1440 vertical pixels at 16 M colors.

The display controller also controls the video mode, which uses industry standard rules to govern the screen resolution and the maximum number of colors that can be displayed on screen.

Software written for a given video mode will run on any computer that supports the mode.

The computer's display controller supports all VGA modes, the most widely used industry standards.

# Video modes

The computer supports video modes defined in the tables below. If your application offers a selection of mode numbers that do not match the numbers on the table, select a mode based on mode type, resolution, character matrix, number of colors and refresh rates. Also, if your software supports both graphics and text modes, the screen display may appear to operate faster using a text mode.

### *Table 1: Video modes (VGA)*

| Video mode | Type | Resolution | Character matrix (pels) | LCD colors | CRT colors | Scanning frequency Vertical (Hz) |
|---|---|---|---|---|---|---|
| 0, 1 | VGA Text | 40 x 25 Characters | 8 x 8 | 16 of 256K | 16 of 256K | 70 |
| 2, 3 | VGA Text | 80 x 25 Characters | 8 x 8 | 16 of 256K | 16 of 256K | 70 |
| 0*, 1* | VGA Text | 40 x 25 Characters | 8 x 14 | 16 of 256K | 16 of 256K | 70 |
| 2*, 3* | VGA Text | 80 x 25 Characters | 8 x 14 | 16 of 256K | 16 of 256K | 70 |
| 0+, 1+ | VGA Text | 40 x 25 Characters | 9 x 16 | 16 of 256K | 16 of 256K | 70 |
| 2+, 3+ | VGA Text | 80 x 25 Characters | 9 x 16 | 16 of 256K | 16 of 256K | 70 |
| 4, 5 | VGA Grph | 320 x 200 Pels | 8 x 8 | 4 of 256K | 4 of 256K | 70 |
| 6 | VGA Grph | 640 x 200 Pels | 8 x 8 | 2 of 256K | 2 of 256K | 70 |
| 7 | VGA Text | 80 x 25 Characters | 9 x 14 | Mono | Mono | 70 |
| 7+ | VGA Text | 80 x 25 Characters | 9 x 16 | Mono | Mono | 70 |

*Table 1: Video modes (VGA) (continued)*

| Video mode | Type | Resolution | Character matrix (pels) | LCD colors | CRT colors | Scanning frequency Vertical (Hz) |
|---|---|---|---|---|---|---|
| D | VGA Grph | 320 x 200 Pels | 8 x 8 | 16 of 256K | 16 of 256K | 70 |
| E | VGA Grph | 640 x 200 Pels | 8 x 8 | 16 of 256K | 16 of 256K | 70 |
| F | VGA Grph | 640 × 350 Pels | 8 x 14 | Mono | Mono | 70 |
| 10 | VGA Grph | 640 × 350 Pels | 8 x 14 | 16 of 256K | 16 of 256K | 70 |
| 11 | VGA Grph | 640 × 480 Pels | 8 x 16 | 2 of 256K | 2 of 256K | 60 |
| 12 | VGA Grph | 640 × 480 Pels | 8 x 16 | 16 of 256K | 16 of 256K | 60 |
| 13 | VGA Grph | 320 x 200 Pels | 8 x 8 | 256 of 256K | 256 of 256K | 70 |

### Table 2: Video modes (852GM)

| Resolution | LCD colors | CRT colors | Vertical frequency (Hz) |
|---|---|---|---|
| 640 x 480 | 256/256K | 256/256K | 60<br>75<br>85<br>100 |
| 800 x 600 | 256/256K | 256/256K | 60<br>75<br>85<br>100 |
| 1024 x 768 | 256/256K | 256/256K | 60<br>75<br>85<br>100 |
| 1280 x 1024 | 256/256K<br>(Virtual with XGA Panel only) | 256/256K | 60<br>75<br>85<br>100 |
| 1400 x 1050 | 256/256K<br>(Virtual with XGA Panel only) | 256/256K | 60<br>75<br>85 |
| 1600 x 1200 | 256/256K<br>(Virtual) | 256/256K | 60<br>75<br>85 |
| 1920 x 1440 | 256/256K (Virtual) | 256/256K | 60 |

*Some SVGA modes are not supported at LCD+CRT simultaneous mode and LCD+CRT Multi Monitor mode.*

*Some models in this series are equipped with an 855GME display chipset. This chipset supports the following video modes in addition to the modes shown in Table 2.*

### Table 2: Video modes (855GME)

| Resolution | LCD colors | CRT colors | Vertical frequency (Hz) |
|---|---|---|---|
| 1920X1440 | 256/256K (Virtual) | 256/256K | 60<br>75<br>85 |
| 2048X1536 | 256/256K (Virtual) | 256/256K | 60<br>75 |

### Table 2: Video modes (852GM) (continued)

| Resolution | LCD colors | CRT colors | Vertical frequency (Hz) |
|---|---|---|---|
| 640 x 480 | 64/64K | 64/64K | 60<br>75<br>85<br>100 |
| 800 x 600 | 64/64K | 64/64K | 60<br>75<br>85<br>100 |
| 1024 x 768 | 64/64K | 64/64K | 60<br>75<br>85<br>100 |
| 1280 x 1024 | 64/64K (Virtual with XGA Panel only) | 64/64K | 60<br>75<br>85<br>100 |
| 1400 x 1050 | 64/64K (Virtual with XGA Panel only) | 64/64K | 60<br>75<br>85 |
| 1600 x 1200 | 64/64K (Virtual) | 64/64K | 60<br>75<br>85 |
| 1920 x 1440 | 64/64K (Virtual) | 64/64K | 60 |

*Some SVGA modes are not supported at LCD+CRT simultaneous mode and LCD+CRT Multi Monitor mode.*

*Some models in this series are equipped with an 855GME display chipset. This chipset supports the following video modes in addition to the modes shown in Table 2.*

### Table 2: Video modes (855GME) (continued)

| Resolution | LCD colors | CRT colors | Vertical frequency (Hz) |
|---|---|---|---|
| 1920X1440 | 64/64K (Virtual) | 64/64K | 60<br>75<br>85 |
| 2048X1536 | 64/64K (Virtual) | 64/64K | 60<br>75 |

### Table 2: Video modes (852GM) (continued)

| Resolution | LCD colors | CRT colors | Vertical frequency (Hz) |
|---|---|---|---|
| 640 x 480 | 16M/16M | 16M/16M | 60<br>75<br>85<br>100 |
| 800 x 600 | 16M/16M | 16M/16M | 60<br>75<br>85<br>100 |
| 1024 x 768 | 16M/16M | 16M/16M | 60<br>75<br>85<br>100 |
| 1280 x 1024 | 16M/16M (Virtual with XGA Panel only) | 16M/16M | 60<br>75<br>85<br>100 |

*Table 2: Video modes (852GM) (continued)*

| | | | |
|---|---|---|---|
| 1400 x 1050 | 16M/16M<br>(Virtual with XGA Panel only) | 16M/16M | 60<br>75<br>85 |
| 1600 x 1200 | 16M/16M<br>(Virtual) | 16M/16M | 60<br>75<br>85 |

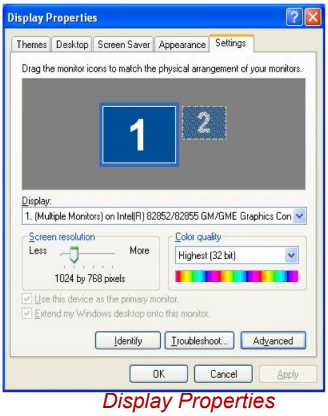
*Some SVGA modes are not supported at LCD+CRT simultaneous mode and LCD+CRT Multi Monitor mode.*

*Some models in this series are equipped with an 855GME display chipset.*

# Display Settings

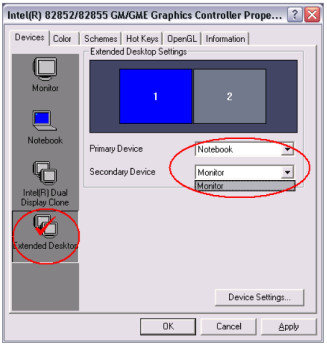
1. You cannot move from the **Settings** tab of **Display Properties** to the multi-monitor when you are using the display of the computer and an external CRT display at the same time.

- The **Settings** tab is displayed in the following steps;
  - Open **Control Panel**, click **Appearance and Themes**
  - Click **Display**
  - Select **Settings** tab




*Display Properties*

- The way to move to multi-monitor
  - Press **Ctrl + Alt + F12** keys to display **Intel(R) 82852/82855 GM/GME Graphics Controller Prope...** (See the next figure).
  - Click in the left of [Devices] tab (See the next figure), then select **Extended Desktop**.
  - Check that the Primary Device option is set to Notebook (the internal display) and the Secondary Device is set to Monitor (the external CRT).




*Intel® 82852/82855 GM/GME Graphics Controller Properties*

2. In some cases DVD video playback images may not be displayed when the display of the computer and a CRT display are used at the same. Reduce the resolution, use the display of the computer only, use the CRT display only or set display device in the multi-monitor, then play DVD.

   - Please refer to *External monitor* in Chapter 7, *Optional Devices*, or the application guide for the setting of each display device.

3. The DVD video overlay is not displayed when the display mode of CRT display is set to high resolution and high refresh rate mode.

   Please decrease the resolution and refresh rate of CRT display.

4. When the display mode is TV or simultaneous LCD (internal liquid crystal display)/TV and the system goes into Standby or Hibernation Mode, you can switch to the LCD (internal liquid crystal display) display mode by pressing **Fn** + **F5**. Under this environment, however, you may not return to the TV or simultaneous LCD (internal liquid crystal display)/TV display mode.

   In these cases, perform the following steps:

   Press **Ctrl** + **Alt** + **F12** to select **Intel(R) 82852/82855 GM/GME Graphics Controller Prope...**. Then click the icon indicating a display device (display mode) you want to use in the left pane of the **Devices** tab.

5. When the LCD (internal liquid crystal display) display mode is selected, the Virtual (Virtual Screen) display mode can be set. However, afterwards, it may not possible to change the screen resolution to more than 1280 x 1024 pixels in Highest (32bit) mode (for example, when you attempt to set the resolution to 1600 x 1200 using the Screen resolution slide bar and then select Highest (32bit) mode from the Color quality drop-down menu).

   In these cases, perform the steps below:

   First, use the Screen resolution slide bar to select the 1024 x 768 resolution, and then change the resolution to more than 1280 x 1024 and select Highest (32bit) from the Color quality drop-down menu.

# Appendix C

# Wireless LAN

## Card Specifications

| | |
|---|---|
| **Form Factor** | Mini PCI TypeIII |
| **Compatibility** | ■ IEEE 802.11 Standard for Wireless LANs<br>■ Wi-Fi (Wireless Fidelity) certified by the Wi-Fi Alliance.<br>The "Wi-Fi CERTIFIED" logo is a certification mark of the Wi-Fi Alliance. |
| **Network Operating System** | ■ Microsoft® Windows® Networking |
| **Media Access Protocol**<br>**Data Rate** | ■ CSMA/CA (Collision Avoidance) with Acknowledgement (ACK)<br>■ 54/48/36/24/18/12/9/6 Mb/s (IEEE 802.11g)<br>■ 11/5.5/2/1 Mb/s (IEEE 802.11b) |

*The Wireless LAN feature is not available on all models.*

# Radio Characteristics

Radio Characteristics of Wireless LAN Cards may vary according to:

- Country/region where the product was purchased
- Type of product

Wireless communication is often subject to local radio regulations. Although Wireless LAN wireless networking products have been designed for operation in the license-free 2.4GHz band, local radio regulations may impose a number of limitations to the use of wireless communication equipment.

*Refer to the sheet "Information to the User" for regulatory information that may apply in your country/region.*

| | |
|---|---|
| **R-F Frequency** | ■ Band2.4GHz (2400-2483.5 MHz) |
| **Modulation Technique** | ■ DSSS-CCK, DSSS-DQPSK, DSSS-DBPSK (IEEE 802.11b)<br>■ OFDM-BPSK, OFDM-QPSK, OFDM-16QAM, OFDM-64QAM (IEEE 802.11g) |

The range of the wireless signal is related to the transmit rate of the wireless communication. Communications at lower transmit range may travel larger distances.

- The range of your wireless devices can be affected when the antennas are placed near metal surfaces and solid high-density materials.
- Range is also impacted due to "obstacles" in the signal path of the radio that may either absorb or reflect the radio signal.

# Supported Frequency Sub-bands

Subject to the radio regulations that apply in the countries/regions, your Wireless LAN card may support a different set of 2.4 GHz channels. Consult your Authorized Wireless LAN or TOSHIBA Sales office for information about the radio regulations that apply in the countries/regions.

## Wireless IEEE 802.11 Channels Sets (Revision B and G)

| Frequency Range<br>**Channel ID** | 2400-2483.5 MHz |
|---|---|
| 1 | 2412 |
| 2 | 2417 |
| 3 | 2422 |
| 4 | 2427 |
| 5 | 2432 |
| 6 | 2437 |
| 7 | 2442 |
| 8 | 2447 |
| 9 | 2452 |
| 10 | **2457*1** |
| 11 | 2462 |
| 12 | **2467*2** |
| 13 | **2472*2** |

*1 Factory-set default channels

*2 Refer to the sheet *Approved Countries/Regions for use* for the countries/

regions that in which these channels can be used.

When installing Wireless LAN cards, the channel configuration is managed as follows:

- For wireless clients that operate in a Wireless LAN Infrastructure, the Wireless LAN card will automatically start operation at the channel identified by the Wireless LAN Access Point. When roaming between different access points the station can dynamically switch to another channel if required.
- For Wireless LAN cards installed in wireless clients that operating in a peer-to-peer mode, the card will use the default channel 10.
- In a Wireless LAN Access Point, the Wireless LAN card will use the factory-set default channel (printed in bold), unless the LAN Administrator selected a different channel when configuring the Wireless LAN Access Point device.

# Appendix D

# AC Power Cord and Connectors

The power cord's AC input plug must be compatible with the various international AC power outlets and the cord must meet the standards for the country/region in which it is used. All cords must meet the following specifications:

| | |
|---|---|
| **Length:** | Minimum 2 meters |
| **Wire size:** | Minimum 0.75 $mm^2$ |
| **Current rating:** | Minimum 2.5 amperes |
| **Voltage rating:** | 125 or 250 VAC (depending on country/region's power standards) |

## Certification agencies

| | |
|---|---|
| **U.S. and Canada:** | UL listed and CSA certified<br>No. 18 AWG, Type SVT or SPT-2 two conductor |
| **Australia:** | AS |
| **Japan:** | DENANHO |

## *Europe:*

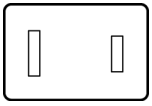
| | | | |
|---|---|---|---|
| **Austria:** | OVE | **Italy:** | IMQ |
| **Belgium:** | CEBEC | **The Netherlands:** | KEMA |
| **Denmark:** | DEMKO | **Norway:** | NEMKO |
| **Finland:** | SETI | **Sweden:** | SEMKO |
| **France:** | UTE | **Switzerland:** | SEV |
| **Germany:** | VDE | **United Kingdom:** | BSI |

In Europe, power cords must be VDE type, H05VVH2-F and two conductor.

For the United States and Canada, plug configuration must be a 2-15P (250 V) or 1-15P (125 V) as designated in the U.S. National Electrical code handbook and the Canadian Electrical Code Part II.

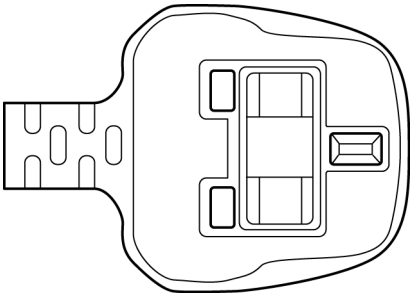
The following illustrations show the plug shapes for the U.S.A. and Canada, the United Kingdom, Australia and Europe.

**USA and Canada**



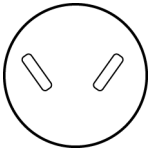
UL approved
CSA approved

**United Kingdom**



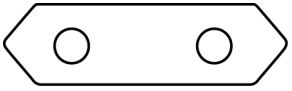
BS approved

**Australia**



AS approved

**Europe**



Approved by the appropriate agency

# Glossary

The terms in this glossary cover topics related to this manual. Alternate naming is included for reference.

***Abbreviations***

***AC:*** alternating current

***AGP:*** accelerated graphics port

***ANSI:*** American National Standards Institute

***APM:*** advanced power manager

***ASCII:*** American Standard Code for Information Interchange

***BIOS:*** basic input output system

***CD-ROM:*** Compact Disc-Read Only Memory

***CD-RW:*** Compact Disc-Read/Write

***CMOS:*** complementary metal-oxide semiconductor

***CPU:*** central processing unit

***CRT:*** cathode ray tube

***DC:*** direct current

***DDC:*** display data channel

***DMA:*** direct memory access

***DOS:*** disk operating system

***DVD:*** digital versatile disc

***ECP:*** extended capabilities port

***FDD:*** floppy disk drive

***FIR:*** fast infrared

***HDD:*** hard disk drive

***IDE:*** integrated drive electronics

***I/O:*** input/output

***IrDA:*** Infrared Data Association

***IRQ:*** interrupt request

***KB:*** kilobyte

***LCD:*** liquid crystal display

***LED:*** light emitting diode

***LSI:*** large scale integration

***MS-DOS:*** Microsoft® Disk Operating System

***OCR:*** optical character recognition (reader)

***PCB:*** printed circuit board

***PCI:*** peripheral component interconnect

***RAM:*** random access memory

***RGB:*** red, green, and blue

***ROM:*** read only memory

***RTC:*** real time clock

***SCSI:*** small computer system interface

***SIO:*** serial input/output

***SXGA+:*** super extended graphics array plus

***TFT:*** thin-film transistor

***UART:*** universal asynchronous receiver/transmitter

***USB:*** Universal Serial Bus

***UXGA:*** ultra extended graphics array

***VESA:*** Video Electronic Standards Association

***VGA:*** video graphics array

***VRT:*** voltage reduction technology

***XGA:*** extended graphics array

# A

**adaptor:** A device that provides an interface between two dissimilar electronic devices. For example, the AC adaptor modifies the power from a wall outlet for use by the computer. This term also refers to the add-in circuit cards that control external devices, such as video monitors and magnetic tape devices.

**allocate:** To assign a space or function for a specific task.

**alphanumeric:** Keyboard characters including letters, numbers and other symbols, such as punctuation marks or mathematical symbols.

**alternating current (AC):** Electric current that reverses its direction of flow at regular intervals.

**analog signal:** A signal whose characteristics such as amplitude and frequency vary in proportion to (are an analog of) the value to be transmitted. Voice communications are analog signals.

**ANSI:** American National Standards Institute. An organization established to adopt and define standards for a variety of technical disciplines. For example, ANSI defined the ASCII standard and other information processing requirements.

**antistatic:** A material used to prevent the buildup of static electricity.

**application:** A group of programs that together are used for a specific task such as accounting, financial planning, spreadsheets, word processing and games.

**ASCII:** American Standard Code for Information Interchange. ASCII code is a set of 256 binary codes that represent the most commonly used letters, numbers, and symbols.

**async:** Short for asynchronous.

**asynchronous:** Lacking regular time relationship. As applied to computer communications, asynchronous refers to the method of transmitting data that does not require a steady stream of bits to be transmitted at regular time intervals.

## B

**backup:** A duplicate copy of files kept as a spare in case the original is destroyed.

**batch file:** A file that can be executed from the system prompt containing a sequence of operating system commands or executable files.

**binary:** The base two number system composed of zeros and ones (off or on), used by most digital computers. The right-most digit of a binary number has a value of 1, the next a value of 2, then 4, 8, 16, and so on. For example, the binary number 101 has a value of 5. *See also* ASCII.

**BIOS:** Basic Input Output System. The firmware that controls data flow within the computer. *See also* firmware.

**bit:** Derived from "binary digit," the basic unit of information used by the computer. It is either zero or one. Eight bits is one byte. *See also* byte.

**board:** A circuit board. An internal card containing electronic components, called chips, which perform a specific function or increase the capabilities of the system.

**boot:** Short for bootstrap. A program that starts or restarts the computer. The program reads instructions from a storage device into the computer's memory.

**bps:** Bits per second. Typically used to describe the data transmission speed of a modem.

**buffer:** The portion of the computer's memory where data is temporarily stored. Buffers often compensate for differences in the rate of flow from one device to another.

**bus:** An interface for transmission of signals, data or electric power.

**byte:** The representation of a single character. A sequence of eight bits treated as a single unit; also the smallest addressable unit within the system.

# C

**cache memory:** High speed memory which stores data that increases processor speed and data transfer rate. When the CPU reads data from main memory, it stores a copy of this data in cache memory. The next time the CPU needs that same data, it looks for it in the cache memory rather than the main memory, which saves time. The computer has two cache levels. Level one is incorporated into the processor and level two resides in external memory.

**capacity:** The amount of data that can be stored on a magnetic storage device such as a floppy disk or hard disk. It is usually described in terms of kilobytes (KB), where one KB = 1024 bytes and megabytes (MB), where one MB = 1024 KB.

**card:** Synonym for board. *See* board.

**CardBus:** An industry standard bus for 32-bit PC Cards.

**CD-ROM:** A Compact Disc-Read Only Memory is a high capacity disc that can be read from but not written to. The CD-ROM drive uses a laser, rather than magnetic heads, to read data from the disc.

**CD-R:** A Compact Disc-Recordable disc can be written once and read many times. See also CD-ROM.

**CD-RW:** A Compact Disc-Read/Write disc can be rewritten many times. *See* also CD-ROM.

**character:** Any letter, number, punctuation mark, or symbol used by the computer. Also synonymous with byte.

**chassis:** The frame containing the computer.

**chip:** A small semiconductor containing computer logic and circuitry for processing, memory, input/output functions and controlling other chips.

**CMOS:** Complementary Metal-Oxide Semiconductor. An electronic circuit fabricated on a silicon wafer that requires very little power. Integrated circuits implemented in CMOS technology can be tightly packaged and are highly reliable.

**cold start:** Starting a computer that is currently off (turning on the power).

**COM1, COM2, COM3 and COM4:** The names assigned to the serial and communication ports.

**commands:** Instructions you enter at the terminal keyboard that direct the actions of the computer or its peripheral devices.

**communications:** The means by which a computer transmits and receives data to and from another computer or device. *See* parallel interface; serial interface.

**compatibility:** 1) The ability of one computer to accept and process data in the same manner as another computer without modifying the data or the media upon which it is being transferred.
2) the ability of one device to connect to or communicate with another system or component.

**components:** Elements or parts (of a system) which make up the whole (system).

**computer program:** A set of instructions written for a computer that enable it to achieve a desired result.

**computer system:** A combination of hardware, software, firmware, and peripheral components assembled to process data into useful information.

**configuration:** The specific components in your system (such as the terminal, printer, and disk drives) and the settings that define how your system works. You use the HW Setup program to control your system configuration.

**control keys:** A key or sequence of keys you enter from the keyboard to initiate a particular function within a program.

**controller:** Built-in hardware and software that controls the functions of a specific internal or peripheral device (e.g. keyboard controller).

**co-processor:** A circuit built into the processor that is dedicated to intensive math calculations.

**CPS:** Characters Per Second. Typically used to indicate the transmission speed of a printer.

**CPU:** Central Processing Unit. The portion of the computer that interprets and executes instructions.

**CRT:** Cathode Ray Tube. A vacuum tube in which beams projected on a fluorescent screen-producing luminous spots. An example is the television set.

**cursor:** A small, blinking rectangle or line that indicates the current position on the display screen.

# D

**data:** Information that is factual, measurable or statistical that a computer can process, store, or retrieve.

**data bits:** A data communications parameter controlling the number of bits (binary digits) used to make up a byte. If data bits = 7 the computer can generate 128 unique characters. If data bits = 8 the computer can generate 256 unique characters.

**DC:** Direct Current. Electric current that flows in one direction. This type of power is usually supplied by batteries.

**default:** The parameter value automatically selected by the system when you or the program do not provide instructions. Also called a preset value.

**delete:** To remove data from a disk or other data storage device. Synonymous with erase.

**device driver:** A program that controls communication between a specific peripheral device and the computer. The CONFIG.SYS file contains device drivers that MS-DOS loads when you turn the computer on.

**dialog box:** A window that accepts user input to make system settings or record other information.

**disk drive:** The device that randomly accesses information on a disk and copies it to the computer's memory. It also writes data from memory to the disk. To accomplish these tasks, the unit physically rotates the disk at high speed past a read-write head.

**disk storage:** Storing data on magnetic disk. Data is arranged on concentric tracks much like a phonograph record.

**display:** A CRT, LCD, or other image producing device used to view computer output.

**documentation:** The set of manuals and/or other instructions written for the users of a computer system or application. Computer system documentation typically includes procedural and tutorial information as well as system functions.

**DOS:** Disk Operating System. *See* operating system.

**driver:** A software program, generally part of the operating system, that controls a specific piece of hardware (frequently a peripheral device such as a printer or mouse).

**DVD-RAM:** A Digital Versatile Disc Random Access Memory is a highcapacity, high performance disc that lets you store large volumes of data. The DVD-ROM drive uses a laser to read data from the disc.

**DVD-ROM:** A Digital Versatile Disc Read Only Memory is a high capacity, high performance disc suitable for play back of video and other high-density files. The DVD-ROM drive uses a laser to read data from the disc.

# E

**echo:** To send back a reflection of the transmitted data to the sending device. You can display the information on the screen, or output it to the printer, or both. When a computer receives back data it transmitted to a CRT (or other peripheral device) and then retransmits the data to printer, the printer is said to echo the CRT.

**erase:** *See* delete.

**escape:** 1) A code (ASCII code 27), signaling the computer that what follows are commands; used with peripheral devices such as printers and modems.
2) A means of aborting the task currently in progress.

**escape guard time:** A time before and after an escape code is sent to the modem which distinguishes between escapes that are part of the transmitted data, and escapes that are intended as a command to the modem.

**execute:** To interpret and execute an instruction.

**Extended Capability Port:** An industry standard that provides a data buffer, switchable forward and reverse data transmission, and run length encoding (RLE) support.

# F

**fast infrared:** An industry standard that enables cableless infrared serial data transfer at speeds of up to 4 Mbps.

**file:** A collection of related information; a file can contain data, programs, or both.

**firmware:** A set of instructions built into the hardware which controls and directs a microprocessor's activities.

**floppy disk:** A removable disk that stores magnetically encoded data.

**floppy disk drive (FDD):** An electromechanical device that reads and writes to floppy disks.

**Fn-esse:** A TOSHIBA utility that lets you assign functions to hot keys.

**folder:** An icon in Windows® used to store documents or other folders.

**format:** The process of readying a blank disk for its first use. Formatting establishes the structure of the disk that the operating system expects before it writes files or programs onto the disk.

**function keys:** The keys labeled F1 through F12 that tell the computer to perform certain functions.

# G

**gigabyte (GB):** A unit of data storage equal to 1024 megabytes. *See also* megabyte.

**graphics:** Drawings, pictures, or other images, such as charts or graphs, to present information.

# H

**hard disk:** A non-removable disk usually referred to as drive C. The factory installs this disk and only a trained engineer can remove it for servicing. Also called fixed disk.

**hard disk drive (HDD):** An electromechanical device that reads and writes a hard disk. *See also* hard disk.

**hardware:** The physical electronic and mechanical components of a computer system: typically, the computer itself, external disk drives, etc. *See also* software and firmware.

**hertz:** A unit of wave frequency that equals one cycle per second.

**hexadecimal:** The base 16 numbering system composed of the digits 0 through 9 and the letters A, B, C, D, E, and F.

**host computer:** The computer that controls, regulates, and transmits information to a device or another computer.

**hot key:** The computer's feature in which certain keys in combination with the extended function key, Fn, can be used to set system parameters, such as speaker volume.

**HW Setup:** A TOSHIBA utility that lets you set the parameters for various hardware components.

# I

**icon:** A small graphic image displayed on the screen or in the indicator panel. In Windows®, an icon represents an object that the user can manipulate.

**i.LINK (IEEE1394):** This port enables high-speed data transfer directly from external devices such as digital video cameras.

**input:** The data or instructions you provide to a computer, communication device or other peripheral device from the keyboard or external or internal storage devices. The data sent (or output) by the sending computer is input for the receiving computer.

**instruction:** Statements or commands that specify how to perform a particular task.

**interface:** 1) Hardware and/or software components of a system used specifically to connect one system or device to another.
2) To physically connect one system or device to another to exchange information.
3) The point of contact between user, the computer, and the program, for example, the keyboard or a menu.

**interrupt request:** A signal that gives a component access to the processor.

**I/O:** Input/output. Refers to acceptance and transfer of data to and from a computer.

**I/O devices:** Equipment used to communicate with the computer and transfer data to and from it.

**IrDA 1.1:** An industry standard that enables cableless infrared serial data transfer at speeds of up to 4 Mbps.

# J

**jumper:** A small clip or wire that allows you to change the hardware characteristics by electrically connecting two points of a circuit.

# K

**K:** Taken from the Greek word kilo, meaning 1000; often used as equivalent to 1024, or 2 raised to the 10th power. *See also* byte and kilobyte.

**KB:** *See* kilobyte.

**keyboard:** An input device containing switches that are activated by manually pressing marked keys. Each keystroke activates a switch that transmits a specific code to the computer. For each key, the transmitted code is, in turn, representative of the (ASCII) character marked on the key.

**kilobyte (KB):** A unit of data storage equal to 1024 bytes. *See also* byte and megabyte.

# L

**level 2 cache:** *See* cache.

**Light Emitting Diode (LED):** A semiconductor device that emits light when a current is applied.

**Liquid Crystal Display (LCD):** Liquid crystal sealed between two sheets of glass coated with transparent conducting material. The viewing side coating is etched into character forming segments with leads that extend to the edge of the glass. Applying a voltage between the glass sheets alters the brightness of the liquid crystal.

**LSI:** Large Scale Integration.
1) A technology that allows the inclusion of up to 100,000 simple logic gates on a single chip.
2) An integrated circuit that uses large scale integration.

# M

**main board:** *See* motherboard.

**megabyte (MB):** A unit of data storage equal to 1024 kilobytes. *See also* kilobyte.

**megahertz:** A unit of wave frequency that equals 1 million cycles per second. *See also* hertz.

**menu:** A software interface that displays a list of options on the screen. Also called a screen.

**microprocessor:** A hardware component contained in a single integrated circuit that carries out instructions. Also called the central processing unit (CPU), one of the main parts of the computer.

**mode:** A method of operation, for example, the boot mode, Standby Mode or the Hibernation Mode.

**modem:** Derived from modulator/demodulator, a device that converts (modulates) digital data for transmission over telephone lines and then converts modulated data (demodulates) to digital format where received.

**monitor:** A device that uses rows and columns of pixels to display alphanumeric characters or graphic images. *See also* CRT.

**motherboard:** A name sometimes used to refer to the main printed circuit board in processing equipment. It usually contains integrated circuits that perform the processor's basic functions and provides connectors for adding other boards that perform special functions. Sometimes called a main board.

**MP3:** An audio compression standard that enables high-quality transmission and real-time playback of sound files.

# N

**non-system disk:** A formatted floppy disk you can use to store programs and data but you cannot use to start the computer. *See* system disk.

**nonvolatile memory:** Memory, usually read-only (ROM), that is capable of permanently storing information. Turning the computer's power off does not alter data stored in nonvolatile memory.

**numeric keypad overlay:** A feature that allows you to use certain keys on the keyboard to perform numeric entry, or to control cursor and page movement.

# O

**OCR:** Optical Character Recognition (reader). A technique or device that uses laser or visible light to identify characters and input them into a storage device.

**online state:** A functional state of a peripheral device when it is ready to receive or transmit data.

**operating system:** A group of programs that controls the basic operation of a computer. Operating system functions include interpreting programs, creating data files, and controlling the transmission and receipt (input/output) of data to and from memory and peripheral devices.

**output:** The results of a computer operation. Output commonly indicates data.
1) printed on paper, 2) displayed at a terminal, 3) sent through the serial port of internal modem, or 4) stored on some magnetic media.

# P

**parity:** 1) The symmetrical relationship between two parameter values (integers) both of which are either on or off; odd or even; 0 or 1.
2) In serial communications, an error detection bit that is added to a group of data bits making the sum of the bits even or odd. Parity can be set to none, odd, or even.

**password:** A unique string of characters used to identify a specific user. The computer provides various levels of password protection such as user, supervisor and eject.

**pel:** The smallest area of the display that can be addressed by software. Equal in size to a pixel or group of pixels. *See* pixel.

**peripheral component interconnect:** An industry standard 32-bit bus.

**peripheral device:** An I/O device that is external to the central processor and/or main memory such as a printer or a mouse.

**pixel:** A picture element. The smallest dot that can be made on a display or printer. Also called a pel.

**plug and play:** A capability with Windows® that enables the system to automatically recognize connections of external devices and make the necessary configurations in the computer.

**port:** The electrical connection through which the computer sends and receives data to and from devices or other computers.

**printed circuit board (PCB):** A hardware component of a processor to which integrated circuits and other components are attached. The board itself is typically flat and rectangular, and constructed of fiberglass, to form the attachment surface.

**program:** A set of instructions a computer can execute that enables it to achieve a desired result. *See also* application.

**prompt:** A message the computer provides indicating it is ready for or requires information or an action from you.

# R

**Radio frequency interference (RFI) shield:** A metal shield enclosing the printed circuit boards of the printer or computer to prevent radio and TV interference. All computer equipment generates radio frequency signals. The FCC regulates the amount of signals a computing device can allow past its shielding. A Class A device is sufficient for office use. Class B provides a more stringent classification for home equipment use. TOSHIBA portable computers comply with Class B computing device regulations.

**Random Access Memory (RAM):** High speed memory within the computer circuitry that can be read or written to.

**restart:** Resetting a computer without turning it off (also called "warm boot" or "soft reset"). *See also* boot.

**RGB:** Red, green, and blue. A device that uses three input signals, each activating an electron gun for a primary additive color (red, green, and blue) or port for using such a device. *See also* CRT.

**RJ11:** A modular telephone jack.

**RJ45:** A modular LAN jack.

**ROM:** Read Only Memory: A nonvolatile memory chip manufactured to contain information that controls the computer's basic operation. You cannot access or change information stored in ROM.

# S

**SCSI:** Small Computer System Interface is an industry standard interface for connection of a variety of peripheral devices.

**serial communications:** A communications technique that uses as few as two interconnecting wires to send bits one after another.

**serial interface:** Refers to a type of information exchange that transmits information sequentially, one bit at a time. Contrast: Parallel interface.

**SIO:** Serial Input/Output. The electronic methodology used in serial data transmission.

**soft key:** Key combinations that emulate keys on the IBM keyboard, change some configuration options, stop program execution, and access the numeric keypad overlay.

**software:** The set of programs, procedures and related documentation associated with a computer system. Specifically refers to computer programs that direct and control the computer system’s activities. *See also* hardware.

**stop bit:** One or more bits of a byte that follow the transmitted character or group codes in asynchronous serial communications.

**subpixel:** Three elements, one red, one green and blue (RGB), that make up a pixel on the color LCD. The computer sets subpixels independently, each may emit a different degree of brightness. *See also* pixel.

**synchronous:** Having a constant time interval between successive bits, characters or events.

**system disk:** A disk that has been formatted with an operating system. For MS-DOS the operating system is contained in two hidden files and the COMMAND.COM file. You can boot a computer using a system disk. Also called an operating system disk.

# T

**terminal:** A typewriter-like keyboard and CRT display screen connected to the computer for data input/output.

**TFT display:** A liquid crystal display (LCD) made from an array of liquid crystal cells using active-matrix technology with thin film transistor (TFT) to drive each cell.

**TouchPad:** A pointing device integrated into the TOSHIBA computer palm rest.

**TTL:** Transistor-transistor logic. A logic circuit design that uses switching transistors for gates and storage.

# U

**Universal Serial Bus:** This serial interface lets you communicate with several devices connected in a chain to a single port on the computer.

# V

**VGA:** Video Graphics Array is an industry standard video adaptor that lets you run any popular software.

**volatile memory:** Random access memory (RAM) that stores information as long as power is supplied to the computer.

# W

**warm start:** Restarting or resetting a computer without turning it off.

**window:** A portion of the screen that can display its own application, document or dialog box. Often used to mean a Microsoft® Windows® window.

**write protection:** A method for protecting a floppy disk from accidental erasure.

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